The RHODE ISLAND MEDICAL JOURNAL

VOL. XXIX JULY, 1946 NO. 7

THE VIRUS TYPE OF INFECTIOUS HEPATITIS*

(Second Paper)

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IN 1923 the writer published a summary[1] of the existing knowledge of the type of infectious jaundice which commonly occurs in the United States, and emphasized the following points: (1) its association with war, (2) its distinction from spirochetal jaundice, (3) that ordinary catarrhal jaundice was probably the sporadic form, and (4) its relation to acute yellow atrophy of the liver. Since then a large amount of new information regarding this type of infection has accumulated, especially during the war period, and another review seems desirable.[2]

Nomenclature

The nomenclature of many of the common diseases of the liver is thoroughly bad. It is desirable that the name of a disease should give clues to its etiology and pathology, and while the term *"Infectious"* Jaundice definitely denotes a parasitic etiology, it gives no information as to the type of infection or the pathology of the condition. In the future this disease should be called "The Virus Type of Infectious Hepatitis", even though the virus etiology is not yet proven to the hilt. Since Eppinger's studies during World War I, it is clear that the essential lesion in this type of infectious jaundice is a *hepatitis* and not a *duodenitis* with secondary obstruction of the common duct, as was commonly held since Virchow's time. It is advantageous to label the condition *hepatitis,* not only for the sake of precision, but also because this term suggests therapeutic approaches not inspired by the term jaundice. There is no serious objection to describing the epidemic type of the disease as acute epidemic hepatitis, as has been done by Danish physicians, if *virus type* is indicated, but some other terms, notably epidemic *catarrhal* jaundice, are misleading because they perpetuate a mistaken idea of the pathology, and should therefore be abandoned. The objection to such synonyms as "Jaundice of Camps" or "Jaundice of Campaigns" is that not only virus but also spirochetal hepatitis may be prevalent in armies.

Reportability

In my paper of 1923 I included a table listing the incidence of the disease by States, and showing that, at that time, no cases of infectious hepatitis had been reported from many parts of the country. This was doubtless due not to the absence of the infection from those localities, but to the fact that it was not reportable to the health authorities. This condition still holds, though to a lesser extent than in 1923. Recent correspondence with State and Territorial Health Officers shows, however, that the disease is even now reportable in but seventeen of the forty-nine States and Territories from which official information was obtained. In two States the disease is reportable only when epidemic; locking the stable door after the bird has flown, to use a mixed metaphor. The probable reason why the health authorities in so many States do not demand information regarding the incidence of the virus type of hepatitis is its low mortality; 1.8 per thousand among soldiers (Barker), and probably less in most outbreaks among civilians. However, as there are occasional outbreaks with much higher mortality and inasmuch as we now possess preventive measures, it is desirable that the disease should be reportable in all States, particularly as it is not infrequent in schools, orphan asylums, summer camps, hospitals, and other institutions. The fact that other, more serious forms of infectious hepatitis may occur in the same territory as the

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* Presented before the Rhode Island Medical Society at its 135th Annual Meeting, at Providence, May 15, 1946.

[1] Infectious Jaundice in the United States. Jour. Amer. Med. Assn., 1923, *81,* 353.

[2] To keep the report within bounds the names of investigators are usually omitted from the text but will be found in the references at the end of the article.

virus type and must be differentiated from it, is also a reason for making the disease reportable. Furthermore, there is danger under existing circumstances that returning service men may import new and more virulent strains of the hepatitis virus. There is always a possibility that either existing local strains or imported ones may suddenly take on added virulence. One has only to recall the history of other virus diseases, poliomyelitis or encephalitis for example, to appreciate this potential danger.

Etiology

While the agent causing this type of infectious hepatitis has not been isolated, certain facts furnish presumptive evidence that it is a virus. It passes through filters impermeable to bacteria, it is resistant to a temperature of 56 degrees Centigrade for half an hour and also resists chlorination, the infection which it causes has a long incubation period and a blood picture similar to that of some diseases of known virus etiology. The experiments of Seide and Meding, who inoculated duodenal secretion from patients with hepatitis into chick embryos, showed that the etiological agent was capable of killing the embryos in 4 or 5 days. However, these observers were unable to isolate the agent or transmit it beyond the fourth generation, when it died out and was lost.

There is evidence which suggests that the causal agent of infectious hepatitis is not a single virus but that the disease may be caused by several closely-allied strains. The variation in the incubation period and clinical course of serum hepatitis as compared with the spontaneous form, and differences in the effect of different strains on test animals may be cited in support of this view. In Denmark, Andersen and Tulinius were able to transmit the disease from man to the hog, whereas in this country Eaton and his associates found the hog to be refractory to American strains from serum hepatitis.

Pathology

The recent studies of Lucké and others substantiate and elaborate Eppinger's findings based on material obtained during World War I. They indicate that the disease should be regarded as a general infection with preponderant liver lesions, rather than as a purely local hepatic disease. The process in the liver is a necrotizing inflammation of varying degrees of intensity. The necrosis of liver cells is usually present in every part of the organ, but there is marked variation in the extent of the process in different areas, and there is a definite tendency for the lesions, in their inception, to involve predominantly the centers of the lobules. In the liver framework, which is not destroyed, infiltration with lymphocytes, plasma cells, granulocytes and macrophages is present in varying degree. In most of the fatal cases the pathological lesions are those of acute necrosis of the liver (acute yellow atrophy) and, in such patients, most extensive destruction of liver cells, often involving whole lobules, is present. Occasionally death results from uremia due to bile nephrosis, particularly when severe dehydration has occurred. The main bile ducts are usually patent, rarely obstructed by inspissated mucus. The abdominal lymph nodes are commonly swollen and edematous, their sinusoids dilated and packed with polynuclear cells and macrophages. The spleen is frequently enlarged, and lesions in the gastrointestinal tract, particularly edema, and at times phlegmonous inflammation in the ileocecal region, have been noted. The last named lesion is doubtless due to terminal infection of the edematous bowel. The lesions in patients accidentally killed while suffering from infectious hepatitis as compared with those who died from the uncomplicated disease differ only in extent, so that it can truly be said that the pathological changes in the virus type of infectious hepatitis and those found in acute necrosis of the liver (acute yellow atrophy) differ only in degree.

Method of Spread

Studies made on human volunteers during the recent war have shown that the causal agent is present in the blood, the naso-pharyngeal secretions, and the feces of patients suffering from the spontaneous disease. Infection can be transmitted in human subjects by oral administration or nasal spraying of pooled feces and by intramuscular injection or oral administration of serum or whole blood. In some of the experiments serial passage in human beings was accomplished. Clinical experience suggests that the method of spread is not the same in all outbreaks. In many epidemics outspoken symptoms and signs of upper air-passage infection have been a prominent feature, in others these have been lacking. The distribution of patients in some epidemics, for example the one in Fond-Du-Lac County, Wisconsin, reported in my 1923 paper, rules out transmission by drinking water or food and suggests transmission by contact, probably through droplet infection, possibly through fomites. On the other hand there are outbreaks in which transmission by the alimentary tract is clearly indicated. Transmission through infected water, sometimes shown to be sewage-contaminated, has been reported by Fraser and others, and I have recently obtained reports of two milk-borne epidemics, one in Forsyth, Georgia (Drs. Murphy, Petrie and Work), and one in Wisconsin (Dr. H. M. Guilford). The observations of Andersen and Tulinius in Denmark indicate that in that country infection through the alimentary tract due to consumption of pork from jaundiced pigs is the common mode of transmis-

sion. Under war conditions especially, but in some instances in civilian outbreaks, association of the infection with unsanitary surroundings suggests the possibility of carriage of the virus by flies from human excreta to food. Furthermore, the question of transmission by suctorial insects has not been sufficiently explored to rule it out as a possible factor in some epidemics.

Serum Hepatitis

One aspect of the virus type of infectious hepatitis which has been highlighted by war experience is its transmission through the inoculation of prophylactic sera, and other preparations containing human blood. The observation is not a new one, for in the days of arm to arm vaccination against smallpox, in which human lymph was transferred, at least one outbreak from this procedure was reported. Reports of hepatitis following the use of convalescent measles serum were published long before the recent war. The wholesale inoculation of members of the American and British armed forces against yellow fever, with the resulting occurrence of many cases of infectious hepatitis, focused attention on this aspect of the disease. Since then it has been shown that not only the use of vaccines and convalescent sera, but also transfusion of whole blood, serum, or plasma and the use of extracted whole blood, may lead to attacks of the virus type of hepatitis. These occurrences make it clear that a virus capable of causing hepatitis may be present for some time in the blood of apparently normal convalescents. Whether this virus is identical with the strain causing spontaneous infectious hepatitis cannot be clearly proven until the two agents concerned can be isolated and compared. Immunological evidence is conflicting, as in some instances an attack of serum hepatitis protects against the spontaneous type, while in others it does not do so. There are clinical differences in the two groups of patients which will be discussed under symptomatology and diagnosis. It is to be noted that the injection of Gamma globulin made from pooled serum has not, so far, resulted in infectious hepatitis. Oliphant and his associates have brought forward evidence that passing blood or serum for the transfusion banks through artificial sunlight will destroy the virus.

Symptoms and Signs of the Spontaneous Type

For purposes of convenience the disease may be divided into 3 stages: (1) the preicteric or prodromal, (2) the icteric, and (3) the period of convalescence. The patient is usually sickest during the preicteric stage except in attacks which result fatally or in some patients with recrudescences during delayed convalescence.

After a *period of incubation* which averages about 28 days, but which varies between 20 and 40 days, the illness usually begins suddenly with the symptoms common to most infectious diseases: fever, sometimes with chills, headache, arthralgia, and generalized muscle aching, which later may be quite severe. The fever usually persists about three to four days, but may last a week longer. It is seldom very high and usually falls by lysis. In about one-third of the patients the onset is insidious rather than sudden.

In addition, most patients show symptoms referable to the upper air-passages, to the digestive tract, or a combination of the two. The usual respiratory symptoms are those of coryza, occasionally with sore throat; the common gastro-intestinal symptoms are anorexia, often profound, with nausea, vomiting and diarrhea. Some patients have respiratory symptoms at the onset and develop digestive disturbances with the icteric stage.

An interesting report from Dr. J. L. Carpenter, of New Hope, Alabama, contains facts indicating that the symptomatology may vary according to the point of entry of the virus. During the summer of 1944 Dr. Carpenter observed about 50 patients with infectious hepatitis, scattered throughout the general population of the neighborhood, all of whom had pronounced respiratory symptoms during the preicteric stage. In the spring of 1945 a second outbreak, limited to the pupils of one school, developed. In this endemic the symptoms during the prodromal stage were gastro-intestinal; notably persistent nausea and vomiting which was sometimes difficult to control. The school water supply was found to be contaminated. The evidence that the disease was water-borne was highly suggestive though not absolutely conclusive.

In the *icteric stage* digestive symptoms may be present or all active symptoms may subside, leaving the patient much more comfortable than during the prodromal period. The demonstration of yellowing of the conjunctiva and skin may be preceded by observation by the patient, of dark amber urine. The usual time for clinically-detectable jaundice to appear is four or five days after the onset of symptoms, but it may be apparent one the first day and occasionally does not appear for several weeks, sometimes during recrudescence only. The jaundice may range in degree from light lemon-yellow to deep orange, or the skin may even have a greenish or a cyanotic tinge. Icterus may persist for from two weeks up to seven months or longer, but usually reaches its maximum during the second or third week. Pruritus may occur with the jaundice, but is seldom so pronounced as in sporadic cases (catarrhal jaundice). In from 7 to 30 per cent of patients, the figure varying in different outbreaks, clinically detectable jaundice is absent.

The important *physical signs*, apart from the jaundice, are: (1) adenopathy, sometimes general-

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ized, most common in the axillary, inguinal and cervical nodes, (2) an enlarged, tender liver, (3) conjunctival injection, and (4) enlargement of the spleen.

The enlarged lymph nodes are apt to vary in size and consistency in different stages of the disease. In the prodromal stage they may range from 0.5 to 3 centimeters in diameter and are usually soft and insensitive. As the disease progresses they tend to become firmer and smaller. They are always discrete.

The enlargement of the liver varies greatly in extent. The organ is palpable in about two-thirds of the patients, and the edge is commonly felt 4 or 5 centimeters below the costal margin in the right midclavicular line. Occasionally greater enlargement occurs, the liver reaching 9 or 10 centimeters below the costal margin or even to the iliac crest. About two-thirds of the patients have a tender liver and the tenderness may be brought out by direct palpation of the organ or by pounding the overlying ribs with the fist. In the writer's experience tenderness is often most pronounced in the region of the gall-bladder.

While the spleen is enlarged to the x-ray in the majority of patients, it is palpable in only nine or ten per cent. Evidence of enlargement may be missed because it is often transitory. There are indications that continuing palpable enlargement is more apt to be present in severely infected patients.

Rarer signs are macular, urticarial or petechial eruptions, and evidences of a hemorrhagic tendency in the form of mild epistaxis or occasionally slight hematemesis or melena. In the latter cases the hemorrhage must be differentiated from bleeding due to preexisting peptic ulcer which may start because the jaundice produces a tendency to hemorrhage.

Observations of the greatest importance concerning the *convalescent stage* of the disease have accumulated during the war period. From the older literature one gets the impression that while convalescence may be prolonged, recovery is almost always complete. I suspect that this is still true of the average epidemic in civil life. After all, members of the armed forces frequently contracted the disease while under conditions which were far removed from those of ordinary civilian existence. A combatant contracting hepatitis had often been subjected to severe and prolonged physical strain, his surroundings were frequently insanitary, and he had frequently been under unusual dietary conditions. Sometimes he had been without food for an abnormally long period of time, or he had been on artificial rations which, while technically adequate, were hardly comparable to a normal diet.

There is abundant evidence that among the armed forces, many patients who had suffered from virus hepatitis were returned from overseas because of failure to convalesce satisfactory. A minority of these patients were neurotics or psychoneurotics, the former usually exhibiting tremor and vasomotor disturbances, the latter gastrointestinal neuroses. The chief complaints of patients with delayed or unsatisfactory convalescence were: extreme weakness; overpowering fatigue; anorexia; imperfect digestion of fats, at times associated with nausea and vomiting; and pain or distress in the right upper quadrant often brought out by bending. About a fifth of them still showed enlarged, palpable livers, and many of them exhibited definite evidence of hepatic dysfunction when appropriate tests were carried out. The history of most of these patients showed that they had been subjected to stresses of certain kinds too soon after clinical recovery: physical exertion, even combat duty; indiscretions in diet, especially excess of fats; or abuse of alcohol. The important fact which observation of these patients brought out was that in virus hepatitis, as in rheumatic infection, clinical cure is not synchronous with healing. In a word, many patients who appear to have recovered from infectious hepatitis still have liver damage sufficiently severe to lead to temporary recrudescence, with a return of symptoms and signs, if the patient overexerts, indulges in certain foods or commits alcoholic excesses.

Symptomatology of Serum Hepatitis

The clinical picture of serum hepatitis differs from that of the spontaneous disease in minor details only. It is true that the period of incubation is much longer in the serum type, 75 to 135 days, with a mean of about 100 days, as contrasted with a mean of about 30 days in spontaneous hepatitis. The onset in serum hepatitis is much more likely to be insidious and, judging from some reports, jaundice tends to appear somewhat later and patients do not appear nearly so sick as those with the spontaneous disease. It has been noted too that dermatitis and anemia, not common in the naturally acquired disease, are quite frequent in serum hepatitis. It has also been observed that severe mental reactions are much more common in the serum type. On the other hand, fever is infrequent with serum hepatitis and lymphadenopathy is much less marked.

Laboratory Tests

Especially in the detection of hepatitis without jaundice, laboratory procedures are of great value. Examination of the urine shows the presence of bile in about three quarters of the patients, most pronouncedly so in the icteric stage but not infrequently both before and after this period. The methylene blue bilirubin test of Franke is an even more delicate index of bile excretion. With bile in

the urine there is commonly albuminuria with a high or normal specific gravity. In dehydrated patients evidences of bile nephrosis may appear.

The leucocyte count may range from a leucopenia under 3,000 to a leucocytosis of 38,000. The average count is within normal limits. During the preicteric stage leucopenia is common. Leucocytosis, when present, occurs later, but at this period also a relative lymphocytosis is usually present. A false-positive Wassermann and Kahn occurs in a few patients during the icteric stage. The heterophile agglutination test, and the coagulation and bleeding times are usually within normal limits. The sedimentation rate, commonly elevated after the first week, often remains so for weeks after the icteric index has returned to normal. The red cell resistance to the fragility test may be somewhat increased.

The stools are rarely completely acholic, though definite diminution in the bile content is common. The duodenal contents may show a few pus cells or rarely tyrosin or cholesterol crystals.

It is not the purpose of this paper to discuss the various tests of liver function in detail, but it is important that certain observations regarding them should be noted. It is significant that in many patients, both those tested during the active stages of the disease and those with delayed convalescence, simple laboratory tests furnish valuable information.

The *icteric index,* which in most patients is continuously above normal for nearly 6 weeks, may still be high in patients with retarded convalescence months after the acute attack. It usually rises rapidly during the late preicteric and the icteric stage and falls rather rapidly as convalescence approaches. In ordinary cases it ranges from 15 to 120 units, but much higher readings are occasionally encountered.

A biphasic *Van den Bergh reaction* is usually present throughout the disease, and in the first and second weeks a direct reaction is present in about one-third of the patients. The biphasic reaction may persist in patients with retarded convalescence.

The points to realize about the more complex tests of liver function such as the hippuric acid test, the cephalin-cholesterol flocculation test, the galactose tolerance test, and the sulfbromphthalein test, are: first, that when positive they give most pronounced results during the acute stage, and second, that none of them is positive in 100 per cent of patients with infectious hepatitis. If the simpler tests leave doubt as to the presence of liver damage one must not depend for further evidence on a single test of liver function but must employ several. As Rappaport puts it, it is important to employ "a medley of diagnostic methods."

In addition to laboratory methods the graduated exercise-tolerance test of Barker, Capps, and Allen may be employed in patients in whom the diagnosis is doubtful, or during convalescence when it is desirable to find out whether liver damage persists. The test is based on the fact that the liver enlarges and becomes tender after exercise if morbid changes in the organ still persist. The fact that the exercise is graduated allows discretion in carrying the test through. In case of unfavorable reaction to the early stages, the later, more strenuous ones, may be omitted.

Diagnosis

In the preicteric stage the diagnosis of virus hepatitis may be impossible. In the presence of an epidemic the disease may be strongly suspected, but in sporadic cases an early diagnosis of upper-air passage infection, acute enteritis, influenza, malaria, or atypical pneumonia is likely to be made. The appearance of an enlarged, tender liver, even though clinically recognizable jaundice is absent, should put the clinician on guard, especially if associated with adenopathy. The discovery of such a liver, particularly if associated with right costo-

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Dr. George Blumer, of Pasadena, California, David P. Smith Clinical Professor of Medicine, Emeritus of Yale University, addresses the 135th Annual Meeting of the Rhode Island Medical Society.

vertebral tenderness, calls for careful examination of the urine for bile and bilirubin, an estimation of the icteric index, a leucocyte and differential count and one or more functional liver tests. The appearance of jaundice is, naturally, an even more significant clue.

Leaving aside yellow fever, which causes a specific form of infectious hepatitis, the virus type must be distinguished from the spirochetal type (Weil's Disease) and the incidental type, which latter may accompany a variety of infectious diseases. It must also be remembered that, inasmuch as virus hepatitis is sometimes afebrile, it must be differentiated from the toxic hepatitis of poisoning by arsenicals, phosphorus, chloroform, carbon tetrachloride, TNT, and a number of less common poisons.*

The differentiation of virus from spirochetal hepatitis is usually not difficult. In spirochetal hepatitis there is frequently a history of contact with rats or with substances likely to be contaminated with rat urine. In the United States most cases of Weil's Disease occur singly in males, and familial, institutional, and community outbreaks are decidedly unusual. The striking hemorrhagic phenomena of spirochetal hepatitis are lacking in the virus form, as are severe renal lesions, except rarely in dehydrated patients. The polynuclear leucocytosis of Weil's Disease is seldom seen in the virus form, in which also the isolation of spirochetes and the agglutination and mouse protection tests are absent.

In incidental hepatitis, occurring as part of the picture in a generalized sepsis or an acute specific infection, diagnosis may occasionally be difficult. Almost any of the common infections may occassionally be complicated by hepatitis. At times specific infections, bacillary dysentery for example, may precede or accompany virus hepatitis. Incidental cases of hepatitis are due to the organism causing the general infection: the staphylococcus, streptococcus or gonococcus, for example. They may produce enlargement of the liver and jaundice but lead to little or no modification of the general picture, and are usually recognizable as an incident in the course of such infection rather than a specific complicating disease. In some chronic diseases: heart disease, cirrhosis, diabetes, a complicating hepatitis may develop and this may be a virus hepatitis or may be one secondary to a terminal infection with bacteria.

There is one other virus disease which may, for a time, be difficult to distinguish from virus hepatitis, namely Infectious Mononucleosis. John Paul states that jaundice occurs in ten per cent of patients with this disease, and suggests that it may be caused by a virus which is a first cousin of that causing infectious hepatitis. Study of the liver in the occasional fatal cases of infectious mononucleosis shows a diffuse, focal hepatitis, but the infiltrating cells differ from those commonly seen in virus hepatitis, being mainly lymphocytes, swollen Kupfer cells, mononuclears and occasional polynuclears and eosins. Even so, the clinical differentiation of the two diseases may be difficult, though a positive Paul-Bunnell test and the presence in the blood smears of characteristic leukocytes in cases of mononucleosis may decide the issue.

Prognosis

There is clinical evidence in many reports on infectious hepatitis that certain conditions, present before the infection was contracted, tend to exert unfavorable influence on its progress. In some of the earlier epidemics it is stated that the fatalities were mostly in feeble infants or the aged and infirm. In other outbreaks, as was true in the influenza pandemic of 1918-19, pregnancy rendered the prognosis more grave. In a recent fatal case, seen with Dr. R. A. Cunningham, the patient had been on a reducing diet for some months with low carbohydrate intake. Inasmuch as a diet high in carbohydrates is essential to protection of the liver cells, it is clear that not only patients on reducing diets but also diabetics under treatment, present a special problem if they contract infectious hepatitis. The importance of adequate liver cell protection in the prognosis can be readily appreciated when it is realized that the great majority of fatalities are due to acute or subacute necrosis of the liver (acute yellow atrophy). As previously noted dehydration with urinary concentration may cause a bile nephrosis with death from uremia, but such cases are not common. Rarely patients die of gastric or duodenal hemorrhage, from pre-existing ulcer. In outbreaks among civilians it is not uncommon to have an entire lack of fatalities, the average mortality being probably not above 1.5 per thousand.

Prevention

The question of preventive measures arises particularly in institutional or other group outbreaks, and, as has been noted, the disease may occur in schools, summer camps, orphan asylums, and institutions for the feeble-minded, as well as among military units. In school epidemics the younger school teachers may be infected, and doctors are by no means exempt. I have seen two endemics among nurses in general hospitals and others are reported in the literature.

There is no specific preventive at the present time. However, it has been shown by Stokes and Neefe that the parenteral injection of gamma globulin, so successful in the prevention and attenuation of measles, may also protect against infection

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* See the Present Status of Non-Obstructive Jaundice Due to Infectious and Chemical Agents. Reuben Ottenberg and Rose Spiegel. Medicine, 1943, *22*, 28.

PROGRESS IN CEREBRAL PALSY

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CEREBRAL PALSY in children is not one disease, but a variety of syndromes in which neuromotor dysfunctions of various types are outstanding symptoms. Common usage has implied that the terms Congenital Spastic Paraplegia, Infantile Cerebral Paralysis, Birth Injury, and Cerebral Spastic Paralysis, etc. are synonymous. Actually these are specific entities, but are usually grouped together because of common etiologic agents. These may be hemorrhagic diseases, cerebral hemorrhage, embryologic defects, infections, anoxia, or other factors that produce pathologic change in the central nervous system.

In a clinical sense, the term Cerebral Palsy is used to signify a paralytic condition present since birth in which spasticity, athetosis, ataxia, or dystonia, are predominant findings. The inability of children suffering from these disorders to acquire motor skills in a normal manner is a reflection of cerebral damage which may vary from gross destruction to scattered cytologic degeneration in the cortex, basilar region, or cerebellum. The syndromes, comprised of motor, behavior, and mental components, depend upon the extent and site of the lesions. Damage to the motor portion of the cerebral cortex produces spasticity. As a result, the "spastic" child suffers from tightened muscles with a diminished range of motion. When the basal nucleii are injured, constant involuntary purposeless motions become manifest. This, for want of a more descriptive term, is called athetosis. Damage to the cerebellum produces ataxia, while diffuse subcortical pathology may produce tremors or rigidity.

In any process where mechanical or biochemical disturbances of neuromuscular apparatus exists, alterations of intelligence and personality may be encountered. On the basis of pathology, mental deficiency is more likely to occur when there is cortical damage.

The physician sees children with cerebral palsy in every crippled children's clinic. If their gait is clumsy or if they walk stiffly with conscious effort, their arms held tightly, they are "spastics". If they are athetotic they may sit on the floor of the clinic, head bobbing and saliva dripping. Every time they try to reach for something, they become hopelessly involved and entangled in a mesh of purposeless movements. They are the most unattractive of the crippled children. Their speech may be thick and poorly understandable and they *appear* mentally inferior to the other crippled children in the clinic.

Phelps, who has done a great deal to clarify concepts of patients with cerebral palsy discusses current opinions concisely in a recent text.[1] He distinguishes several types of cerebral palsy, and emphasizes the necessity for different treatment in each type. The "spastic" child requires relaxation of muscle so that range and motion will be enhanced; the "athetoid" needs general relaxation to help control his constant driving motions; the "ataxic" child requires training in balance and coordination. The treatment consists not only of physiotherapy, but also re-education in the form of speech training, vocational guidance, schooling, psychiatric treatment, and parent education. Phelps states that surgery is a necessary adjunct to correct spastic deformities, and drugs may be useful to decrease tremors and rigidity.

It should be emphasized that these children are suffering from a condition which is chiefly mechanical and has little bearing on general health. Little improvement can be expected without training, which in most instances must be maintained over a period of years. Mental deficiency, convulsive disorders, and regressive forms of post-encephalitic states adversely influence the prognosis. Yet, of the approximately six living children per 100,000 population that are born each year with cerebral palsy, perhaps four may be of normal or superior intelligence, three of whom are usually capable of physical improvement.

Progress in Diagnosis

The physician should diagnose cerebral palsy in his patient early, because it is in the early childhood years that treatment and training are most efficacious. Unfortunately early diagnosis is not common because the diagnostic methods and laboratory procedures available in the average community are of little help. Diagnosis in infants and young children requires special equipment, and the capable

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diagnostician must have an intimate knowledge of developmental behavior mechanisms. Competent neurologists, orthopedic surgeons, and psychologists are essential consultants in the diagnostic set-up. Research in developmental behavior, in psychometrics, in muscle and nerve physiology, and electronics, has paved the way for practical clinical approaches to a hitherto untenable medical condition. However, these advances are not yet available to most physicians.

Developmental Examination: Gesell and Amatruda[2] have eliminated some of the haziness surrounding deviations from normal development in infants. Through the utilization of systematic studies of every possible behavior mechanism in the normal and abnormal child, and with the aid of ingenious movie recording devices, they have outlined practical methods to help interpret minimal deviations presented by the infant with neurologic injury. Their work provides a solid background for the diagnosis of cerebral palsy. They have classified four fields of behavior: (1) Motor, (2) Adaptive, (3) Language, (4) Personal-Social. A study of motor behavior concerns muscle control and coordination, as well as posture, balancing, sitting, standing, grasping, etc. Adaptive behavior involves the finer sensori-motor coordinations, such as coordination of the eyes and hands in reading or in manipulation. Likewise, deviations in language behavior (not only speech but facial expressions and gestures as well), and study of personal-social behavior (adaptability to social surroundings including bowel and bladder habits, feeding ability, etc.) are important clues in the early diagnosis of neurological disorders. Gesell and Amatruda classify behavior mechanisms in chart form for practical use. They also describe developmental tests. Gesell believes cinema recordings a most valuable aid in the analysis of defective behavior patterns associated with cerebral palsy, and uses the movie chiefly for that purpose.[3] An examination of this sort enhances the early diagnosis of cerebral palsy.

Psychometric Tests: The evaluation of mental status—perhaps the most important practical issue in palsied children—has been more significant since the development of the Vineland Social Maturity Scale.[4] This scale reflects *actual attainment* rather than potential capacity. The evaluation of the developmental status of the patient is obtained from questions asked parents or friends. "Social" quotients obtained from a test of this nature are of great significance in crippled children because they evaluate mentality in the light of physical handicap.

Electromyography: That characteristic action currents from damaged muscle can be demonstrated graphically has long been known. However, a practical diagnostic method has only lately been available in spastic or dystonic conditions because of technical difficulties. Recently skillful workers have shown it possible to make oscillographic records of different muscles simultaneously without interference from related antagonists.[5] This method involves the use of apparatus similar to that used for electroencephalography. Topical electrodes, four action current amplifiers and a multiple recording oscillograph are utilized. The fact that even in spastic muscle there is a position of complete relaxation as evidenced by the electromyogram[6] is encouraging to those interested in the use of drugs to enhance relaxation of muscle. If the myogram is interpreted along with other tests for muscle strength, an accurate evaluation of the response to muscle training is afforded.

Electroencephalography: The electroencephalograph is sometimes useful in localizing cortical pathology associated with cerebral palsy. This is especially true in the cases of recent trauma, or where progressive and expanding lesions are involved. Areas of cortical atrophy can often be detected. Frequently the electroencephalogram reveals the presence of disordered brain physiology in the absence of observable neurological signs. The technique is now widely used in children in the diagnosis of convulsive disorders and the localization of cortical lesions.[7]

Pneumoencephalography: The pneumoencephalogram has lost its wide popularity in diagnosis since electroencephalography has become available for general use. An X-ray following air injection into the ventricles is still an excellent method for localizing cerebral tumors or areas of cortical atrophy. Since the air encephalogram is not a simple procedure in children, it is usually reserved for corroborative evidence of suspicious electroencephalographic findings. Incidentally, Amatruda[8] believes there is little correlation between the pneumoencephalographic findings of cortical damage and developmental progress. In a group of children in whom X-ray evidence showed indisputably that there was cerebral injury or degenerative disease, the development proceeded normally. This is reassuring to those interested in the ultimate outcome of a patient with known cerebral damage who is progressing well.

Progress in Re-Education

The ultimate aim in any cerebral palsy program is for the patient to achieve independence. Once the basic diagnosis has been established, not only must the immediate plan for physical training be instituted, but also educational, vocational, and psychological guidance must be integrated to form the training program. Several hundred articles and books, varying from highly technical medical data to simple advice to parents and lay workers on

the general needs of the cerebral palsied have been published. These are listed in a cerebral palsy bibliography.[9] The variety of articles emphasizes the vast scope and detail entailed in re-education.

Physiotherapy: The basis of re-education is physiotherapy. Muscle training through relaxation and exercise results in the establishment of control. The physiotherapist must be so well acquainted with the intrinsic mechanisms encountered in the various syndromes of cerebral palsy, that she is able to modify standard procedures to meet individual needs. Through the publications of organizations interested in crippled children, the physician can acquaint himself with the recent trends in muscle training. The Ohio Society for Crippled Children publishes a handbook[10] on physical therapy for cerebral palsy that is an excellent outline for a systematic physiotherapy program. It describes in detail rhymes, exercises, rhythm music, and useful restraints and appliances. Likewise, a handbook demonstrating improvised equipment for the physically handicapped[11] is of great help to those interested in this phase.

Occupational Therapy: This form of re-education utilizes toys and games to train the child to achieve the social amenities, as well as acquire vocational skill. It is important to use playthings of proven therapeutic value. Rogers and Thomas[12] have listed these materials for children with cerebral palsy. More recently, the American Occupational Therapy Committee published a Cerebral Palsy Round Robin Digest[13] for the purpose of recording the ideas and practices of qualified therapists. It is an unusual review and is highly recommended.

Education: Recent trends in cerebral palsy reflect the equal importance of all workers in this field. It has been proved that only with close cooperation of physicians, therapists, teachers, psychologists, social workers, and parents can a successful program be achieved. A pamphlet recently published, emphasizes this.[14] It contains an excellent list of references for those who need help in this work.

The fact that the peculiar and special needs of the cerebral palsied children are receiving more attention is evidenced by a perusal of the medical news sections of the Journal of the Americal Medical Association during the latter half of 1945. Excerpts such as these are becoming more common, "the City of New York plans a demonstration centre for the study and treatment of children with cerebral palsy"; the "Strong Memorial Hospital in conjunction with the University of Rochester Medical and Dental School plan a clinic and convalescent centre for children with cerebral palsy"; the "Cerebral Palsy Association of Rochester, N. Y. . . . a group of 95 parents of patients afflicted with the disease . . . are supporting the University project" the "Shriners of North America will expand their crippled children's program." The forming of these and other constructive programs throughout the country pertinent to the problem are indicative of the great demand for special clinics and schools for these children.

The report of the Commission for the Study of Crippled Children in New York City[15] emphasizes the lack of care given children with palsies and urges that a program be established in such a manner that physical and mental education may progress simultaneously. Since academic education cannot wait until motor patterns are established well enough for a normal school program, special classes which will account for physical handicaps must be organized. The responsibility for diagnosis and selection of children for these classes is a medical one. Cerebral palsy clinics must be organized at selected hospitals for this purpose. The report strongly urged that one school be established experimentally to serve as a demonstration centre to develop methods which may be followed by the other schools.

There are some excellent projects now in operation for palsied children. The majority have university teaching affiliations and are established from an attitude of research and demonstration. Unfortunately these centres are few.

Parents Education: The social worker has gained prominence in these new methods of approach in cerebral palsy, because it is in her sphere that parent education lies. Any program that does not have the parent as an active participant is weakened. Children with cerebral palsy respond to treatment better if their parents also receive some guidance. Parents' attendance at clinic for observation and training in physical therapy and a home program to insure the correct application of principles learned in the clinic round out an intelligent program.

Advances in Drug Therapy

New physiologic concepts in the transmission of nervous impulses to skeletal muscle have stimulated clinical investigation of drugs which facilitate this action. A review of current opinions regarding neuromotor physiology clarifies the rationale of a pharmocologic approach to the treatment of cerebral palsy. In normal skeletal muscle, tonus is a reflex contraction which depends mainly on slow asynchronous electrical discharges from anterior horn cells in the reflex arc. The motor nucleii and motor tracts of the central nervous system inhibit the overflow of these impulses and thus prevent hypertonus or spastic paralysis. Whereas it was

continued on next page

previously believed that nervous impulses directly caused muscle contraction, it has now been established that they only stimulate the formation of chemical mediators which transmit this energy to the muscle fibers.[16] Specifically acetylcholine, formed at the motor nerve endings, is probably responsible for transmitting the nerve impulse to the muscle fibers. These fibers, however, contain cholinesterase which rapidly inactivates acetylcholine. Normal muscle action is dependent on this production-destruction mechanism. In abnormal neuromotor conditions, this delicate balance is impaired, presumably at the muscle end-plate itself. Experimentally, two drugs, curare and eserine (or related compounds like physostigmine or neostigmine) seem capable of enhancing cholinergic (acetycholine) action, not only in normal but also pathologic states. After adequate curarization, although the stimulation of efferent nerves will not produce muscle contraction, the liberation of acetylcholine proceeds normally in the muscle. On the other hand, neostigmine acts by inhibiting cholinesterase, which in turn, permits the accumulation of acetylcholine. Thus, both drugs, pharmocological antagonists, produce muscular relaxation which is useful in the physiotherapist's program. Obviously the answers to the physiologic action of these drugs are not yet completed, and a review of experimental data now undergoing investigation has no place in this discussion. A few newer concepts are, however, intriguing to those interested in neuromotor disorders.

Whereas the concept has been presented that curare produces muscle relaxation by preventing acetylcholine from eliciting its usual response, (rather than by impairing its formation) evidence is accumulating that curare may also act on the central nervous system cells involved in the reflex arc, and interfere with synaptic transmission within the spinal cord.[17] The effect of curare in individuals having neurological lesions is certainly out of proportion to the weakness of voluntary muscle as obtained when a similar dose is injected in a normal individual. This concept is very persuasive inasmuch as it is known that many more motor neurons are physiologically active than can be brought into action by the voluntary efforts of patients with neuromotor dysfunction. Because curare may block the disturbed function above the motor neuron it may be possible to facilitate the utilization of these surplus neurons.

A central action of neostigmine at the synaps similar to that at the myoneural junction is suspected. Clinically this is evidenced by relaxation of muscle spasm and facilitation of voluntary motion in various types of neuromuscular dysfunction with large doses of that drug.[18] The explanation of this action is not clear, but it is known that an overproduction of acetylcholine in the muscle fibers is paralytic in action.

It remains to be seen whether the future will change our concepts in the pharmocologic approach to cerebral palsy. At present, it must be emphasized that drugs with relaxing actions are useful adjuncts to physiotherapy and muscle training programs. These drugs must be non-toxic and without undesirable side effects. They must be long-lasting in action. Quinine, hyoscine and belladonna derivatives have been used on occasion with limited success. Curare (Intocostrin) and neostigmine (Prostigmine) promise to fulfill best the requirements in cerebral palsy.

Curare. Jungle curare used by the Orinoco and Amazon Indians to tip their darts and arrows has been so purified and standardized that substances which produced toxic effects not related to the relaxing action of curare have been eliminated. This purified curare is a relatively safe drug in producing muscle relaxation when used properly.

In cerebral palsy of children the intramuscular injection of Intocostrin, in a dose previously determined to give optimal response, is advocated.[19] This varies from 0.9 units to 3.3 units of curare per kilogram of body weight and may even be greater than this. Immediately after each such injection there is a short period of masked facies and unsteadiness, then a period of hypotonia and listlessness, followed by a feeling of lightness and exhilaration lasting approximately four days. The muscles of the trunk and extremities are relaxed, speech is clearer, and motor performance definitely smoother than usual.

Neostigmine. Neostigmine (Prostigmine) has long been known for its parasympathetic action in reducing post-operative intestinal and urinary bladder atony, and for its use in myesthenia gravis. A few years ago it was first used by Kabat and Knapp [20] to reduce muscle spasm in poliomyelitis. On the basis of that work, several investigators reported encouraging results with the drug in cerebral palsy.

For pediatric use, single oral doses of 5 milligrams each of Prostigmine Bromide, three times a day (later four or five times a day) may be more beneficial than larger doses.[21] The drug must be used for at least six months or until no further improvement is noted. Larger doses of oral medication, varying from 15 milligrams to 45 milligrams daily, depending upon the age of the patient, has been recommended.[22] The intramuscular injection of the neostigmine methylsalicylate, occasionally fortified by oral medication is also used.[18] To eliminate the side effects of neostigmine, such as abdominal cramps or diarrhea, atropine sulfate, 0.1 milligrams to 1.3 milligrams may be administered once daily. Response to treatment is indi-

cated by a slow but gradual decrease in muscle spasm, diminishing athetoid movements, and an improvement in speech.

Studies at Bradley Home. In Rhode Island, at the Emma Pendleton Bradley Home, prior to the discontinuance of the cerebral palsy program there in 1942, several clinical studies of the action of drugs in palsied children were made. Nichols and Warson[23] studied the actions of hyoscine, phenobarbital, benzedrine and atropine. Encouraging results were obtained with maintenance doses of hyoscine hydrobromide, in that drooling and athetosis were lessened, and relaxation and confidence increased. Denhoff and Bradley[19] evaluated curare in children in whom spasticity was prominent. By systematic adjustment of the dosage for each child it was found that from 0.9 units to 3.3 units of curare per kilogram of body weight when injected intramuscularly resulted in relaxation lasting approximately four days. No dangerous or toxic effects were noted, and the response to muscle training and the educational program was definitely accelerated. Since the obvious disadvantage of curare treatments were the repeated intramuscular injections, Press[24] studied the identical children with quinine methochloride, a drug recently synthesized and said to have a curare-like action when given orally. However, no constant therapeutic effect was noted. This was in contrast to the favorable action of curare on the same children.

Summary

1. Cerebral Palsy is a syndrome in which neuromuscular dysfunction is the outstanding symptom. Specific symptoms may be spasticity, athetosis, ataxia, rigidity and tremors, singly or in combination.

2. The diagnostic clinic depends on physicians with intimate knowledge of developmental behavior mechanisms, as well as consultant neurologists, orthopedic surgeons and psychologists. Newer aids to diagnosis include psychometric tests, electromyography and electroencephalography.

3. Functional self-sufficiency is the aim of any re-educational program. Physical therapy, utilizing relaxation, is the basis of good treatment.

4. Curare and neostigmine, as adjuncts to physiotherapy promise to be of value in cerebral palsy.

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DOCTOR'S ORDERS

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THE VIRUS TYPE OF INFECTIOUS HEPATITIS

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by some strains of hepatitis virus. The long incubation period makes it possible to employ this measure soon after exposure to infection is suspected or is known to have occurred. The globulin is used in a single dose of 0.15 cc. per pound of body weight, administered intramuscularly. There is clear evidence that while a considerable proportion of inoculated subjects may be protected against some strains of hepatitis virus and that in some show that the procedure fails in infection by some strains. The fact that the results are conflicting should not deter us from a trial of the method, especially in institutional or group outbreaks.

Treatment

The experiences of the war suggest that in the past we have failed to realize the potential gravity of this disease. While it is perfectly clear that it is definitely more serious in the armed forces than it is in civil life, it is probably true that in the patient with an infection of average severity we have not paid sufficient attention to the importance of a long period of rest during convalescence, to the significance of diet, especially a high carbohydrate diet with adequate protein intake, and to the necessity of keeping the patient under careful observation during the convalescent period and for some months afterwards.

During the prodromal period, especially in patients with fever and other evidences of infection, patients actual attacks may be *mitigated,* reports the usual regime followed in infectious diseases should be adopted: complete rest in bed in a well-ventilated room, plenty of fluids, a soft, easily-digestible diet, and symptomatic treatment for respiratory or gastro-intestinal symptoms, discomfort from back or muscle aches, and insomnia.

Opinion is not unanimous as to the necessity for a high protein diet and the desirability of giving intensive vitamin therapy, especially the B complex. Some observers are insistent on the use of both these measures while others do not regard them as important.

During the icteric stage the diet should be fat-free, and throughout the disease drastic purgation is to be avoided. In the occasional patient with hypoproteinemia, serum albumen may be administered or methionine in doses varying with the severity of the disease. The use of this amino acid is based on experimental work which indicates that it protects the liver cells. In hepatitis it is given orally, from three to eight grammes daily in cases of average severity. In very sick patients from six to eight grammes daily may be given, or even as much as twelve grammes. No toxic reactions to methionine have been noted. In patients with severe dehydration intravenous infusions of glucose in saline are indicated. In patients suspected of or known to have peptic ulcers, Vitamin K may be administered during the icteric stage.

Conclusions

1. The common type of infectious hepatitis in the United States is almost certainly due to a virus or, to one of a number of closely-allied strains of virus.

2. In addition to the spontaneously-occurring disease, there is a clinically-indistinguishable type of hepatitis transmitted by the use of vaccine containing human blood, by convalescent sera, by transfusion of whole blood, serum, or plasma, and by extracted whole blood. While the transmissibility of the spontaneous disease probably ceases a week or two after jaundice appears, further information is needed as to the length of time that the virus can persist in the blood-stream of convalescents even though present information indicates two and a half months as the maximum.

3. Attacks of so-called "catarrhal" jaundice are indistinguishable from those occurring in epidemics of infectious hepatitis, and there is every reason to believe that they represent the sporadic form of the disease.

4. Pathological studies clearly indicate that there is no dividing line between the hepatic lesions of infectious hepatitis and those of acute necrosis of the liver (acute yellow atrophy). The difference between the lesions of these two clinical pictures is one of degree only.

5. There is good evidence that in patients with infectious hepatitis, liver damage often persists long after clinical recovery, and that the profession has tended to regard the disease too lightly. For some months after an attack of infectious hepatitis patients should be under observation and, if necessary, should be subjected to the graduated exercise tolerance test or should have multiple tests of liver function.

6. The prognosis of the disease, both as to mortality and complete recovery, is more serious in patients in military service than in civilians.

7. In addition to complete rest and a long period of convalescence the essentials of treatment consist of a high carbohydrate and adequate protein intake, the avoidance of fats during the icteric stage, and, especially in the more serious cases, the use of substances such as methionine, which protect the liver cells.

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The RHODE ISLAND MEDICAL JOURNAL

Owned and Published Monthly by the Rhode Island Medical Society,
106 Francis Street, Providence, Rhode Island

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"IT BECOMES OUR HIGHEST DUTY . . ."

THE Act of Independence passed by the General Assembly of the Colony of Rhode Island and Providence Plantations on May 4, 1776, two months before the other colonies united to break the bonds of European allegiance, citing the imposition of a "most debasing and detestable Tyranny", states that

"it becomes our highest duty to use every means, with which God and Nature have furnished us, in support of our invaluable rights, & privileges; to oppose that Power which is exerted only for our destruction—"

Strong words those. But the occasion called for vigorous and even violent action. The future of a people was at stake; the freedom of a man was threatened. And on the basis of such courage, strength of character and personal ambition was built the greatest nation in the history of the world.

But the greatest can become weak through failure to maintain strength of the individual as quickly as by subjugation by superior military might. Little wonder then that present day conditions continue to evoke increasing consideration of our willingness to transfer our invaluable rights and privileges to single authorities, refusing for our part to face obligations ever present and apparent.

Organized medicine has expressed no little concern in the past few years at the proposal of legislation to nationalize its ranks, and to place into operation federal compulsory medical care schemes. The opposition of medicine is not that of a craft or guild striving to maintain its individual rights and privileges. It is a far deeper, a far more comprehensive struggle. It is the struggle to preserve for all men the same invaluable rights and privileges referred to in the historic document written in this State one hundred and seventy years ago when tyranny from without our borders "instead of Protecting is endeavoring to destory . . ."

Aside from all the social benefits involved in any program of national health and welfare, there is a fundamental issue that has yet to be met. That is the question of local responsibility. All thinking today in these matters seems to be predicated on what the Federal government can or will do. The question is posed with such frequency that the individual has apparently lost sight of the fact that he and all his fellow Americans constitute the federal government.

It was heartening, in this era of Washingtonia directives, to read on May 3 of the proposal made by Senator Taft for a national health program that would place the entire responsibility on the States

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and on the local governments. Regardless of whether the Taft health bill is superior or not to the Wagner proposal, certainly the introduction of any measure of such importance in Congress in which there is insistence throughout the program upon the State responsibility, and that the Federal government's interest is only in those unable to meet the expenses, "leaving the remainder of the population—about 75%—free to work out their own problems and lives, and free to develop and act under the same principles of freedom, energy, and initiative which have made progress possible in this country", is sound thinking if the democracy of 1776 is to survive and flourish beyond 1946.

HAPPY BIRTHDAY TO YOU, DR. HARDMAN

It was a pleasure to see Dr. Margaret S. Hardman at the Annual Meeting of the Rhode Island Medical Society, and it was an added pleasure to have a festive glass with the young lady at our symposium (from the Greek words for a drinking feast) at the Narragansett Hotel. Chronologically, Dr. Hardman is our oldest member, as she celebrates her ninetieth birthday in July. But few are younger in spirit.

We have spoken before of the good and active part that women physicians play in Rhode Island. Among a group of these who are constant attendants at the scientific meetings Dr. Hardman has been conspicuous for farther back than hardly any of us can remember. She has belonged to the American Medical Association, the Rhode Island Medical Society and the Providence Medical Association for practically the whole of this century.

Besides her routine private practice Dr. Hardman was for thirty-five years examining physician for both the Providence and Pawtucket Y.W.C.A., examining physician for the Providence School Department for many years and physician to the Doyle Avenue Home. We are also told that she was the first woman physician to go into Providence factories to advise young women about their health.

Dr. Hardman has thus had an active, worthwhile career, carried on to a period in life such as only a rare one among us can hope to reach. We are gratified by the interest she still maintains in our activities and we heartily congratulate her on becoming a nonagenarian.

DR. LULL NEW AMA SECRETARY

At the annual meeting of the American Medical Association in San Francisco the first of this month Dr. George F. Lull, former deputy surgeon general of the Army, was officially inducted as the new secretary and general manager of the Association to succeed Dr. Olin West.

In Doctor Lull the Board of Trustees of the AMA have apparently made an admirable choice for the all important position of secretary of the largest medical organization in the world. He comes to office at a time when organized medicine is facing extremely serious problems that call for strong and vigorous action. His background as a military leader with the medical forces should stand him in good stead for the tasks ahead.

For 33 years Doctor Lull served the Army Medical Corps with distinction. Early in the first World War he commanded a base hospital in Louisiana, and he later organized and commanded base hospital 35 of the American Expeditionary Forces. From 1922 until 1926 he served as director of the department of preventive medicine at the Army medical center, and three years later he was named as medical adviser to the Governor General of the Philippine Islands where he served for three years. From 1932 to 1936 he had charge of the Vital Records Division of the Surgeon General's Office. Then came a term of service as director of the department of sanitation at the Carlisle Barracks Field Service School. In 1940 he returned to the Surgeon General's Office to serve for the following three years as Chief of Personnel Service until his appointment as Deputy Surgeon General.

With such a varied and extensive career in organizational and administrative work, Doctor Lull was a logical choice to fill the office made vacant by the retirement of Dr. West. That he starts upon his new duties with the full support of the medical profession of the country is beyond question.

RHODE ISLANDERS AT AMA SESSIONS

With California but sixteen hours away by air flight, many Rhode Island physicians traveled to the sessions of the American Medical Association at San Francisco the first week of this month. At special society meetings Dr. George Waterman and Dr. B. Earl Clarke presented scientific papers, the former addressing the American Radium Society on the "Use of Long Interstitial Needles in the Treatment of Cancer of the Cervice", and the latter addressing the pathologists on "Primary Systemic Amyloidosis—Report of a Case."

Dr. Alex M. Burgess, delegate from the Society to the convention, left by motor early in June, heading first for Banff, Canada, where he represented the American Medical Association at the annual meeting of the Canadian Medical Association. From the Banff meeting Dr. Burgess headed for San Francisco where he represented our Society at the meetings of the House of Delegates of the AMA. Also at these sessions was John E. Farrell, executive secretary of the Society.

One of the outstanding scientific exhibits at the AMA meeting was that of Dr. F. Ronchese, of Providence, who presented a display on occupational marks as an aid to personal identification. The exhibit consisted of photographs and drawings showing the callouses and similar marks produced on the hands and elsewhere by the tools or machines in various trades or professions.

. . . Pro Patria . . .

CAPTAIN THOMAS A. MARTIN, MC, AUS
Died: August 4, 1942

LIEUTENANT IRVING BLAZAR, MC, AUS
Died: December 20, 1943

LIEUTENANT RAYMOND LUFT, MC, USNR
Died: June 23, 1945

CAPTAIN MILTON KORB, MC, AUS
Died: December 29, 1945

A PRELIMINARY REPORT ON THE CRAWFORD ALLEN HOSPITAL FOR RHEUMATIC CHILDREN

LT. WALTER T. ZIMDAHL, MC

The Author. *Lt. Walter T. Zimdahl, MC, of Providence. Chief, Cardio-vascular Service, Brooke General Hospital, Texas; Formerly Resident in Cardiology, Heart Station, Rhode Island Hospital.*

REALIZING the need for well-regulated convalescent care for rheumatic children in Rhode Island, the Crawford Allen Hospital was opened for that purpose in July, 1944. To acquaint more physicians with the program and with what is being done at the Crawford Allen, a preliminary report has been prepared. As yet it is too early to draw any definite conclusion but we present this as an informative statistical report of the hospital's activity up to April 1, 1946.

Rheumatic fever and rheumatic heart disease is still one of the most prevalent diseases in children. Swift and Atwater[1] estimated about 170,000 cases per year in the United States in a population of 110,000,000. Martin[2] estimated annual deaths at about 40,000. The greatest incidence of first attacks is experienced between the ages of four to fifteen, although it may occur any time from infancy to old age. About one-half to two-thirds of those who have suffered from rheumatic fever are cardiac cripples before the age of fifty.

Rheumatic fever in children, unless acutely fatal, usually runs a subacute or chronic course. Relapses are common and of the various types of manifestation only one or two may be present, such as low-grade fever, increased sleeping pulse rate, elevated erythrocytic sedimentation rate, electrocardiographic findings, cardiac signs, failure to gain weight or loss of "pep." With each relapse there are increasing signs of cardiac damage and unless the resisting capacity of the child can be made sufficient to throw off the infection, the final picture is one of cardiac failure. If on the other hand, no additional relapses occur, many children recover without permanent cardiac damage. At the onset, it must be emphasized that institutional care is not yet the final answer or the ideal form of treatment. However, it is one of the best we have so far. And it offers great benefit to both types of patients, those in whom we hope to prevent further attacks, and those who run a long chronic course.

In 1941,[3] there were less than a thousand beds devoted exclusively to the care of rheumatic heart patients in the United States. This has increased somewhat but not as widely as it should have and must. The Crawford Allen Hospital is devoted exclusively to the treatment of rheumatic heart disease and convalescent care. It occupies a three-story brick building on the Narragansett Bay near East Greenwich, Rhode Island. It is divided into wards with eight to ten beds in each and has two isolation rooms. The hospital has a capacity of fifty beds.

The Crawford Allen Hospital is another ward of the Rhode Island Hospital and is under the supervision of the Department of Pediatrics. The Medical Staff consists of those visiting physicians on the Pediatric Staff of the Rhode Island Hospital, members of the visiting staff of the Heart Station, one house officer on pediatrics and the Resident in Cardiology at the Heart Station of Rhode Island Hospital. The nursing staff consists of trained nurses and senior student nurses from the School of Nursing, Rhode Island Hospital. The hospital does not accept acute cases but as soon as the patients recover from their initial acute stage they may be admitted. Cases of rheumatic fever with or without heart disease and cases of active rheumatic heart disease are accepted.

Both male and female patients are admitted, the only limitation being on age which is thirteen at present. Both ward and private patients are admitted. The ward patients' expenses are met by local welfare agencies and by funds from the State Rheumatic Fever Program. Patients are accepted from clinics and homes or from a general hospital. Many cases are transferred from the Potter Building at Rhode Island Hospital soon after their acute stage but while some activity is still present.

The Providence Board of Education supplies two teachers so that all children continue their school work without interruption. The children after their initial shyness soon develop a fondness for the sanatorium because of its pleasant surroundings. During the warm months, the children spend most of their time out of doors—in a bed, on the playground, or on the sandy beach. During the winter months, games and occupational therapy

occupy their time. Necessary dental work is done at the Joseph Samuel Dental Clinic at the Rhode Island Hospital while the children are at the Crawford Allen Hospital. When indications are present, tonsils and adenoids are removed during the patient's stay.

We have established classes in which the children are graded according to their rheumatic status and functional capacity. These are listed from one to six. The following is a description of these six classes.

Class I. Complete bed rest except in certain selected cases in which the patients are small then they may be (1) carried to tub for bath; (2) carried to bathroom; (3) one hour to school in cart or bed.

All patients are placed in Class I on admission after a period of isolation. The more severe cases are on complete bed rest. However, the milder cases are also put in Class I but are advanced more quickly. We have found that this arrangement has a psychological advantage.

Class II. Up only for bathroom and wash, twice daily. May be in cart for school and out-of-doors. School—two hours a day in cart or bed if not tiring.

Class III. Up for bathroom and meals only. May go out in cart. School—two hours in cart or bed if not tiring.

Class IV. Up only for bathroom and meals. Beach in cart. School, if not tiring, two hours a day. Walk to school and use blackboard. Walk in hospital and on terrace.

Class V. Out of bed. No running. Extra rest one hour and half twice daily. School three hours. Ocean bathing with care.

Class VI. No running. Otherwise no restriction of activity. One hour rest in mid-day; 15 minute rest before meals. School four hours.

According to the activity of the rheumatic infection and improvement of the patient, they are advanced through these six classes. Each patient of course is judged individually and may spend less time in some classes than others. The average length of time in the first three classes has been about three to four months and the time in the upper three classes correspondingly less. The average stay for each patient at the Crawford Allen Hospital has been 164 days or approximately 5½ months.

Blood sedimentation rates are taken on the lower three classes once to twice a week and once every two weeks on the upper three classes. The temperature, sleeping pulse and weight are also observed closely and recorded. Although it is not always the case, we have observed in most of our patients that gain in weight is parallel to the clinical improvement. The improvement in the pale, chronically-ill, underweight child has been remarkable and gratifying. Even in those patients in which severe heart damage is already present, improvement and increased resistance has been noted.

The observations in the upper three classes are equally important for here we are able to define the limitations of the patient's activity. After these closely supervised observations of the patient are made, he can then be discharged with the proper recommendations. The first eight recommendations by Hiss[4] as used by the Schools of Syracuse, New York have been helpful when discharging the patient. They are as follows: *1.* No restrictions. *2.* All gymnastics but no competitive athletics. *3.* Mild gymnastics. *4.* No physical exertion. *5.* Rest periods in school and restrictions of recess activities. *6.* School for the handicapped. *7.* Child to be furnished transportation to-and-from school by parents and *8,* home teacher. These can only be made after a careful diagnosis and evaluation of the patient's physical capacity have been made by watching the child in the last three of our six classes.

Visitors are allowed every second Sunday and are required to wear face masks. This impresses upon the parents the importance of respiratory infections. The parents are seen at this time informally by the resident who attempts to answer all questions and also acquaint the parents with the condition of their child. The parent's role in each case is carefully explained, so that when the patient is discharged the parents will have a complete understanding of the disease and further treatment of their child. All patients are discharged to their private doctor or respective clinic for further follow-up care.

Since July, 1944, 114 patients have been treated at the Crawford Allen Hospital. Of this group, 73 patients have been discharged. Their average stay was 164 days. On April 1st, there were 41 patients at the Crawford Allen. We have used the arbitrarily-divided category of (1) mild cases, in which the patient had rheumatic fever alone with no cardiac involvement, (2) moderate cases, those in whom there were present demonstrable cardiac damage or hypertrophy and (3) marked cases, in those patients where there was present severe cardiac damage such as marked cardiac hypertrophy and mitral stenosis. There were 14 patients placed in the first group, 70 in the second group and 28 in the third group on admission. Two cases of congenital heart disease were admitted. There were two deaths in the series. These two children were transferred to the Rhode Island Hospital, a few days previous to death. Both were patients with severe cardiac damage.

There were 31 cases admitted during or immediately following their initial attack. Of these, 14

continued on next page

have been discharged with an average stay of 168 days at the Crawford Allen. There was one death in this series of initial attacks.

There were 70 cases in which "polyarthritis" was the predominant initial symptom. This, however, did not consist in many cases of swollen, red-hot, painful joints but only of fleeting, aching, and painful joints and muscles. Chorea appeared in 12 cases, 11 of which went on to develop signs of rheumatic heart disease. There were 30 cases in which the complaints were of a general nature such as failure to gain weight, pallor, malaise, anorexia, low grade temperature, etc. Ten cases were associted with severe carditis. Only 3 cases were observed with rheumatic nodules.

There have been 4 readmissions to the hospital. CASE 1 was an eight year old boy who had a history of rheumatic activity for one year previous to admission. He remained at Crawford Allen 187 days and improved. Sedimentation rate became normal rapidly, he gained weight and was discharged to the clinic. In March, 1946, he was readmitted from the clinic because of a daily low grade temperature. His social conditions at home were poor.

CASE 2 was a six year old girl who entered the hospital August, 1944, with a history of rheumatic activity several times previously. Her first attack was in August, 1943. She remained at Crawford Allen 194 days on her first admission. She gained weight as her appetite returned and her entire picture improved remarkably. She was discharged in February, 1945, as improved, with minimal cardiac damage, and was followed by the clinic. In February, 1946, because of paleness, failure to gain weight, she was readmitted. She was found to be in a state of malnutrition. Again, her social conditions were found to be very poor.

CASE 3 was a ten year old girl who was first admitted to the Crawford Allen in February, 1944, and remained 240 days. She was discharged as improved but with severe cardiac damage. On September, 1945, she was admitted to the Rhode Island Hospital with migratory arthritis and cardiac decompensation. On September 14, 1945, she was transferred to the Crawford Allen again. For several months her sedimentation time remained above 40 mm. per hour. At present she is only in class 2.

CASE 4, was a ten-year old boy who entered the Crawford Allen on March 15, 1945, with generalized symptoms which were diagnosed as rheumatic fever. He remained 166 days and improved very well. He returned January 11, 1946, because of continued upper respiratory infections, failure to gain weight and increased sedimentation rate. He also had very poor social and living conditions. He has now gained ten pounds and improved generally and we are awaiting adjustment of his social affairs at home before discharging him again.

These cases again illustrate that another basic problem in attacking and fighting this disease is in the social and economic conditions. To improve this situation the cooperation of all our national, state and local agencies is needed.

A few of the discharged cases are presented briefly.

CASE 1: W.D., well developed, eight-year old white male, became ill in March, 1945. The family physician observed "rheumatic nodules." The patient remained in bed for eight weeks but because of unsatisfactory progress, treatment at Crawford Allen was recommended and he was admitted June 30, 1945. There was a history of scarlet fever at the age of five. Physical examination showed a thin, well-delevoped boy with enlarged cervical glands. The heart was enlarged by percussion to the left and there was a grade II systolic murmur at the apex. P_2 was greater than A_2. The pulse was 110. The rest of the physical was negative. His red blood count was 3,810,000, white count 10,900, hemoglobin 77%. A urinalysis was negative. TB. patch test was negative. X-ray of the heart showed minimal enlargement.

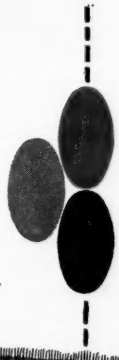
On admission, the blood sedimentation rate was 30 mm. in one hour (Westergren Method). The child's temperature was 99.8° F each afternoon. This continued for about 60 days and then stayed normal. His pulse rate also dropped to 90. The blood sedimentation rate came to normal also. He remained 141 days and was discharged on normal activity. Physical examination was the same except that the patient looked and felt remarkably improved. He had gained 9.5 pounds.

CASE 2. N.H., a ten-year old white male, was admitted to the Crawford Allen Hospital, October 20, 1944. In August, he had developed pain and swelling of all his joints with elevated temperature. He was kept in bed for two weeks and allowed up slowly. Since then he complained of joint pains on-and-off. With this incidence of rheumatic fever, he developed a limp, particularly in the morning. He was nervous, excitable and irritable at all times. The boy had noticed dyspnea on exertion, could not play with other children, gained no weight and had a poor appetite.

Past history revealed poliomyelitis at the age of nine and scarlet fever at five. He had always had colds and sore throats. For the past eight to ten months he had bouts of fever in the afternoon with headaches and vomiting.

Physical examination showed a pale, well-developed, poorly-nourished boy in no distress.

continued on page 518



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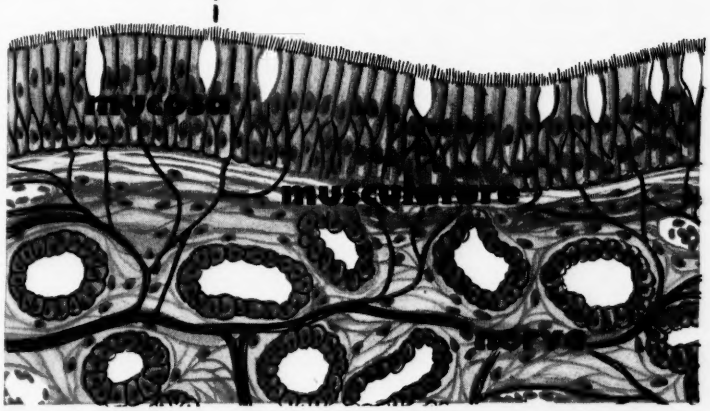
bronchiolar musculature . . .
central nervous system . . .



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RESEARCH IN THE SERVICE OF MEDICINE

REPORT ON CRAWFORD ALLEN HOSPITAL

continued from page 516

The heart was not enlarged to percussion. The rate was rapid and there was a grade III systolic murmur over the entire precordium. Slight residual weakness of the right peroneal group of muscles was present. X-ray showed straightening of the left border of the heart. His red blood cell count was 3,740,000, white blood count 8,800 and 12.1 gm. hemoglobin. His temperature rose in the afternoon for the first 70 days at the hospital. The blood sedimentation rate which was 35 mm. in one hour on admission went to 10mm. in one hour in six weeks. The patient regained his appetite and enthusiasm. While he was at the Crawford Allen Hospital, he had necessary dental work completed. He remained for 210 days. During his last month of observation, he took part in all activities with no dyspnea or other signs of limitation. The patient gained 29 pounds during his hospital stay and was discharged with recommendations against strenuous exercise.

CASE 3: D.N., a nine-year old white female was admitted to the Crawford Allen Hospital, June 20, 1945. She had been a healthy child until March, 1942, when she became clumsy and awkward in school and unable to concentrate. The diagnosis of chorea was made by her physician and was kept in bed for ten weeks. After this she lost some of her "nervousness" but never gained any weight. She began to have frequent colds during the winter and the following March developed the same symptoms as previously. She was in a general hospital for two weeks and then discharged. She became worse and was followed at a clinic and was admitted to Crawford Allen. Physical examination showed a thin, pale girl with mild chorieform movements of the hands and face. There was no enlargement of the heart by percussion. A grade II systolic murmur was present over the apex. X-ray showed a normal size heart. After admission she showed a steady gain in weight which amounted to 14 pounds in her 186 days at the hospital. Her temperature which rose to 99.8° each day fell to normal in one month. Her purposeless movements disappeared and she became interested in her play activities. The blood sedimentation rate which was 30 mm. in one hour returned to normal in two months. She was discharged to the care of her physician.

CASE 4: G.W., a ten-year old white female, was admitted to the Crawford Allen Hospital January 25, 1945. Previously the patient had been admitted to a general hospital with the chief complaint of headache, abdominal pain and fever for three days. The diagnosis had been mesenteric adenitis. Past history revealed that the patient had not been able to gain weight and complained of continual fatigue. Her family history showed two brothers with a positive diagnosis of rheumatic fever. Physical examination showed a well-developed, undernourished, pale girl with flushed facies. The cervical glands were palpable and her pharynx was inflamed. The heart was not enlarged to percussion but there was a grade II systolic murmur heard over the precordium, maximum at the apex. There was moderate voluntary spasm over the entire abdomen. The urine was negative. Red blood count 4,000,000, white count 13,150 with 81% polys, 19 lymphs. The blood sedimentation rate was 65 mm. in one hour. An X-ray showed straightening of left border of the heart.

The blood sedimentation rate fell to normal in 49 days and at this time she began to gain weight. Her total gain was 16 pounds in her 160 day stay at the hospital. Her general condition on discharge was better than it had been at any time previously.

Summary

All of us associated with this problem at the Crawford Allen Hospital have seen that the patients have definitely been benefited. The general well-being of the patient has been tremendously improved. Each patient must be treated individually, and this is done under the eyes of trained observers. The period before discharge is important because that is the time when we can best observe the physical capabilities of each patient and more adequately make our recommendations. The greatest potentiality of this type of treatment is in the child in whom the disease runs a chronic, subacute course. The improvement in these patients is very encouraging, although the final result can not be known for some time. I hope that more of us will become interested in this great problem of rheumatic fever and rheumatic heart disease.

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[3] Hedley, O. F., Facilities in the United States for the Special Care of Children with Rheumatic Heart Disease. Public Health Dept., 56:2321 (1941).
Public Health Rept., 56:2321 (1941).
[4] Hiss, J. G. Fred: A Plan for Rehabilitation for Rheumatic Subjects, J. Pediat: 26, 230, March 1945.

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ANNUAL REPORTS . . . 1945

Rhode Island Medical Society

ANNUAL REPORT OF THE SECRETARY

The Society has continued its steady growth of membership and during the year reached a total of 726 Fellows. Since the cessation of the war all but 29 of our members have returned to practice in the State, thus materially aiding in the activation of many of the programs necessarily curtailed during the war years.

The transition from war to peace brought with it many complex problems, most important of which from the Society's viewpoint was the readjustment to civilian practice of the physician-veterans. Through the committee on War Participation, and the executive office of the Society, every effort was made to assist each doctor returning to the State.

The bimonthly meetings of the Council have been excellently supported by the councillors who have labored conscientiously and willingly on the many problems presented. The development of preliminary plans for a prepaid voluntary surgical insurance plan has added to the work of the Council and the House of Delegates which was called into three special sessions to discuss the proposed program. Detailed reports of these meetings have been recorded in the MEDICAL JOURNAL during the year that the entire membership of the Society may be informed. Likewise, reports of various committees, and actions by the Council have been reported, and therefore do not bear repetition, even in summary, in this report.

With the adoption of the recommendation made a year ago that the various committees submit their recommendations in writing to the House, the work of that body has been more efficiently carried out, and in the opinion of your Secretary the procedure is most advantageous to all delegates.

It has been a high honor to serve as the Secretary of this Society during the past five years—years that are historical for the nation as well as the Society. I am truly appreciative of the support that has always been accorded to me by the officers, the Council, the House of Delegates, and the various committees, in the discharge of the duties of this office.

Respectfully submitted,

WILLIAM P. BUFFUM, M.D., *Secretary*

May 8, 1946

ANNUAL REPORT OF THE TREASURER

Receipts

Cash on Hand, January 1, 1945	$ 7,197.14
Checks not cashed	42.40
	$ 7,154.74
Annual Dues	11,990.00
Donations	2,898.56
R. I. Foundation (For Inst. of Pathology)	500.00
Harris Fund	380.08
Terry Fund	48.00
Davenport Fund	44.50
Ely Fund	186.50
Morgan Fund	21.50
Endowment Fund Interest, Transferred to Peoples Savings Bank	85.00
Exhibits, Annual Meeting, Donations, etc.	2,062.14
Exhibits, 1946	1,387.50
	$26,758.52
Outstanding checks	95.37
	$26,853.89

Expenses

Printing and postage	$ 763.81
Gas	45.68
Electricity	99.65
Fuel	877.25
Telephone	223.97
City Water	18.18
Library supplies and expenses	710.85
Library repairs	357.71
Salaries	12,011.86
Journals, Ely and Terry Funds	84.85
Safe Deposit	7.20
Treasurer's Bond	25.00
Delegate, American Medical Association	100.00
Expenses, Meetings and Committees	494.62
Endowment Fund interest transferred to savings	85.00
Expenses of exhibits, annual meeting	1,057.53
Collector of Internal Revenue	1,177.81
Ely Fund, purchase of 15 shs. R. I. Public Service Co.	515.63
Executive Secretary, travel expenses	301.52
Insurance	793.60
Medical Library Association Dues	15.00
Office equipment	280.16
	$20,046.88
Cash on Hand to Balance	6,807.01
	$26,853.89

SPECIAL FUNDS

Interest and Disbursements

January 1, 1946

J. W. C. ELY FUND

A memorial fund established in 1912 by the son and granddaughter of Dr. J. W. C. Ely, in the amount of $1,500, to be called the J. W. C. Ely Fund and the income from which is to be used for periodicals.

37 shares, Rhode Island Public Service Co.	$ 1,071.67
Interest (Paid to R. I. Medical Society for periodicals)	89.00
*Mechanics National Bank, Common Stock, Dividends in Liquidation	520.00
	$1,680.67

**(*April 16, 1945, 15 shares of R. I. Public Service Co. purchased with dividends—$515.63*)*

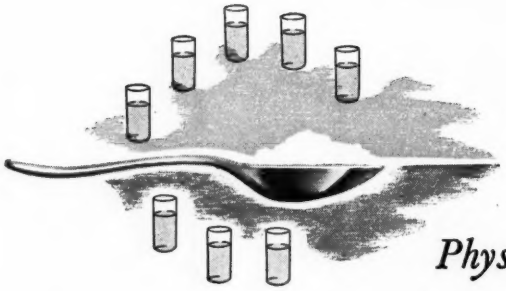
continued on page 537

COMPONENT SOCIETIES BY MEDICAL DISTRICTS

Society	*Delegates*	*Councillor*	*Officers*	*Meeting Dates*	*Annual Meeting*
Kent County Medical Society	Rocco Abbate	Fenwick Taggart	President, Whitman Merrill Vice President, P. Erinakes Secretary, J. E. Vidal Treasurer, John A. Mack	2nd Thursday of each month	December
Newport County Medical Society	James C. Callahan Samuel Adelson	Norman M. MacLeod	President, A. M. Tartaglino Vice Pres., Wm. A. Stoops 2nd Vice Pres., P. P. Ciarla Secretary, H. W. Brownell Treasurer, N. U. Zielinski Censors: N. M. MacLeod John A. Young	4th Tuesday of every other month—Jan., Mar., May, July, Sept., Nov.—usually no July meeting held	January
Pawtucket Medical Association	Earl J. Mara Robert Henry Charles L. Farrell Henry Hanley	James L. Wheaton Earl F. Kelly (alternate)	President, Wm. N. Kalcounos Vice Pres., Earl J. Mara Treasurer, L. A. Senseman Secretary, K. W. Hennessey	On or after 3rd Thurs. of each month at time and place designated by the Pres. (except July-August)	March
Washington County Medical Society	Linwood H. Johnson Julianna R. Tatum	John P. Jones	President, S. P. Turco Vice Pres., Louis Morrone 2nd Vice Pres., S. A. Capalbo Sec'y-Treas., J. R. Tatum	January, April, July, October — on second Wednesday of the month	January
Woonsocket Medical Society	H. Lorenzo Emidy Francis King	James McCarthy Saul Wittes (alternate)	President, Joseph Reilly Vice Pres., Richard Dowling Secretary, Alfred King Treasurer, Paul Boucher Censors: E. L. Tremblay George Crepeau Joseph McKenna	2nd Tuesday, alternate months, Sept.-June	Elective
Providence Medical Association	Bertram H. Buxton H. G. Calder A. V. Migliaccio A. Henry Fox Arcadie Giura Alex. M. Burgess Emery M. Porter Henry E. Utter George W. Davis Kalei K. Gregory Edward V. Famiglietti Peter F. Harrington	Emery M. Porter	President, Paul C. Cook Vice Pres., Guy W. Wells Secretary, Frank Cutts Treasurer, Wm. P. Davis	1st Monday of each month; Oct. — May inclusive	January

Frank I. Matteo	Peter P. Chase	P. I. O'Rourke
E. Wade Bishop	J. L. Belliotti	Robert Baldridge
G. Edward Crane	Robert H. Whitmarsh	George Waterman
Arthur E. Martin	Frank Cutts	Herman A. Lawson
B. Earl Clarke	Wm. P. Davis	Albert H. Jackvony
Paul C. Cook	William Horan	

Society	*Officers*	*Annual Meeting*	*Chairman, Elected Committees*
Rhode Island Medical Society	President, Herman C. Pitts Vice President, Michael H. Scanlon President Elect, Arthur H. Ruggles Secretary, Morgan Cutts Treasurer, Charles J. Ashworth Ass't Secretary, Charles B. Ceppi Ass't Treasurer, G. Raymond Fox	May 15 and 16, 1946 at Rhode Island Medical Society Library, 106 Francis Street Providence 3, R. I.	Philip Batchelder and Merle M. Potter, Auditors Stanley Sprague, Committee on Industrial Health Russell S. Bray, Committee on the Library Alex M. Burgess, Committee on Postgraduate Education Arthur H. Ruggles, Committee on Medical Economics William H. Foley, Committee on Public Laws Guy W. Wells, Committtee on Public Policy and Relations John E. Donley, Committee on Publication Herman C. Pitts, Committee on Scientific Work and Annual Meeting



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THE EVOLUTION OF THE MEDICAL RECORD*

HENRY B. MOOR, M.D.

The Author. *Henry B. Moor, M.D., of Providence. Chief, Surgical Division, The Memorial Hospital, Pawtucket, R. I.*

I HAVE CHOSEN as a subject the evolution of medical records and I might add in conjunction with that subject, evolution of man.

Having arrived in life on the unfavorable side of fifty, I, too, have shown some evolution. I presume I was one of the poorest record writers in the Rhode Island Hospital as an interne. If there is any doubt relative to this matter, as our late Al Smith oft repeated, look at the records. They still must shamefully repose in the archives of the Rhode Island Hospital. If onyone then had predicted that I one day would become interested in the writing of and improvement of hospital records, I am sure evolution would have immediately become revolution in my own mind. This is no implication upon the Rhode Island Hospital. It is a personal criticism of my own effort. I am proud to say that I had the privilege of serving as an intern in this hospital.

By this introduction, I do not intend to imply that I am today a model record writer. Far be it from such. We have in our own hospital a disease common, I believe, to most hospitals, known as chronic recorditis intercepted with frequent acute exacerbations. We, and I am sure all hospitals, are fighting this disease and making rapid progress.

This endeavor has been fathered largely by requirements of the college of surgeons which constantly tends to a betterment of the hospitals throughout the United States although I am free to admit we all complain at times of some of their directions.

The history of medical records dates as far back as 3000 B.C. Those were merely medical papyri and pictures engraved on some of the Egyptian tombs. The first actual case reports that are on record are those by Hippocrates who was born about 400 B.C. Let me quote from Dr. MacEachern's book on "Medical Records in the Hospital" a paragraph relative to Hippocrates' Histories. "Hippocrates wrote his notes in a full as well as precise manner. He recorded the patient's condition in detail including his facial appearance, temperature, pulse and respiration, excreta, sputum and localized pains and movements of the body. He did not bother with non-essentials nor did he write down meaningless words." That observation of Hippocrates coming from the present director of educational activities of the College of Surgeons to me is impressive, understanding and hopeful. So long as we have men like this at the helm we will not be burdened with pages of meaningless directives. Many lines of endeavor in this country today, in my opinion, are impeded and discouraged by such voluminous demands. May the College of Surgeons be ever mindful of Dr. MacEachern's comment on Hippocrates and keep us within the essential and out of the meaningless spheres of endeavor.

Definite and continuous records in the United States date from 1752 when Benjamin Franklin and others established the first hospital in Philadelphia which later became known as the Pennsylvania hospital. For the first fifty years the records consisted only of a hospital register with the patient's name, address, disorder, condition on discharge and dates of admission and discharge. In 1873, the hospital began to take complete histories and has a complete file to the present day.

The New York Hospital which opened its doors in 1771 now has filed away in its record department an almost unbroken series of records from 1793 up to the present minute. I was in this department within a few weeks and it alone is as large as our entire administration offices.

continued on next page

* Presented at the Annual Meeting of the Rhode Island Association of Medical Record Librarians, at Providence, May 15, 1946.

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EVOLUTION OF MEDICAL RECORD

continued from preceding page

The purpose and value of medical records is now well established. The first and most important role of the medical record is to the patient himself, although, not usually as understood by him. They are of value to him only if the records are accurate, full and precise. If this premise is sound, the only way to fulfill these requirements is to have a careful and complete history and physical done on admission or within 24 hours of admission, not 24 days after discharge or not at all, as I am sure it has been in some instances in the past.

The second role of the record is the value to the hospital. The hospital today in conjunction with the attending physician is responsible for treatment, comparative work and results obtained. By the same premise as before stated, unless histories and physicals are taken within 24 hours of admission, this comparative data can mean nothing, if it is jotted down at some later date from memory.

The third role of the medical record is obvious to all, its value to the attending doctor, its comparative data in case of further sickness and its protective value to him in case of any legal entanglement.

The fourth very important role of the medical record is its value in medical research and statistics. In no instance, however, can anyone of these values be of true consequence unless the records are written promptly, carefully and conscientiously.

In 1918 the American College of Surgeons instigated a movement known as hospital standardization and adopted as one of its minimum requirements "that accurate and complete records be written for all patients, and filed in an accessible manner in the hospital."

Another very important move was made in 1928 when a group known as the Association of Record Librarians of North America was organized largely through the efforts of the College of Surgeons. I am sure you did not come here to listen to a discourse on this organization as I know you are all familiar with its principles and requirements. Suffice it to say at present certain hospitals are approved as teaching units for record librarians which courses and preliminary education leads up to the certification of members to this organization. This educational work is controlled by the American Medical Association, the American College of Surgeons and the American Hospital Association, assisted by the American Association of Medical Record Librarians.

The College of Surgeons with the approval of these other associated organizations has made certain specific rules relative to records which must be fulfilled in order for a hospital to be on the ap-

continued on page 531

DISTRICT MEDICAL SOCIETY MEETINGS

PAWTUCKET MEDICAL ASSOCIATION

The regular monthly meeting of the Pawtucket Medical Association, to which local drug and dental friends were invited, was held Wednesday, May 29, 1946, at the Pawtucket Golf Club. The annual golf tournament was a feature of the afternoon with first prize, a Tycos sphygmomanometer, being awarded to Dr. Irving Farrell. Second prize a Bard Parker sterile instrument container, went to Dr. Stanley Sprague. The putting contest was a triple tie between Dr. Irving Farrell, Dr. John O'Brien, and Mr. Thomas Simpson. A variety of door prizes was distributed to the rest of the members.

Following the banquet, the business meeting was called to order by President William N. Kalcounos. Reading the minutes of the previous meeting was dispensed with and as there was no unfinished or new business the meeting was adjourned. Thereupon, Dr. Earl Kelly presided as master of ceremonies and introduced the speaker of the evening. Lt. Commander William L. McBlain, Chaplain, U. S. N., stationed at Quonset Naval Air Base.

Chaplain McBlain, with 12 battle stars and 2 years in the Pacific, saluted the men who worked so faithfully on the home front and also those who entered the services. In particular he lauded the efforts of the Nurses' Corps and asserted that psychologically they were responsible for many cures. Relating the numerous duties of a chaplain, he summarized them by saying that to obtain the impossible, one went to the chaplain.

Respectfully submitted,

KIERAN W. HENNESSEY, M.D., *Secretary*

NEWPORT COUNTY MEDICAL SOCIETY

The bi-monthly meeting of the Newport County Medical Society was held at the Newport Hospital on Tuesday, June 4, 1946.

The meeting was opened at 8:47 P. M. with Dr. Alfred M. Tartaglino presiding.

The minutes of the March meeting were read and approved.

The applications of Drs. John Malone, George Tollefson and Ralph Gleason, approved by the censors, were received and the three men were elected in the usual manner.

The President then welcomed the invited guests of the Society—members of the Board of Trustees and the Superintendent of the Newport Hospital.

The speaker of the evening, Mr. Kenneth D. MacColl of Providence, President of the Board of Trustees of the Pawtucket Memorial Hospital and President of the Rhode Island Blue Cross, was then introduced. Mr. MacColl spoke first of the relations of the Pawtucket Memorial Hospital and of the Newport Hospital with the Blue Cross organization, comparing the patient days paid for by the Blue Cross, the comparative costs and the amounts paid to the two institutions by the Blue Cross, since its inception. He next compared the two hospitals in size, number of beds, the number of patients treated and income received. He went on further to elaborate particularly on the sources of income of the Pawtucket Memorial Hospital, mentioning the book plan and guarantors and their recent successful professionally managed campaign for a building fund for extension of the hospital plant. Of particular interest to the members of the Society, he then spoke of the attempt being made in Pawtucket to encourage staff members to become fellows of the American College of Physicians and the American College of Surgeons and to have them become diplomates of the several specialty boards. He admitted that, at present, the number of fellows and diplomates was extremely small, but that pressure was being brought to bear, particularly upon the younger staff members by their colleagues and by the Board of Trustees, to qualify in an attempt to raise the professional standing of the institution, as a whole, and to improve its position with the various accrediting agencies. He noted that the age of retirement of chiefs of service had been raised from 60 to 62, but stated that he felt that probably this was a step in the wrong direction and this change probably would not stand. Also mentioned was the policy of appointing chiefs of staff for professional attainment, rather than for seniority.

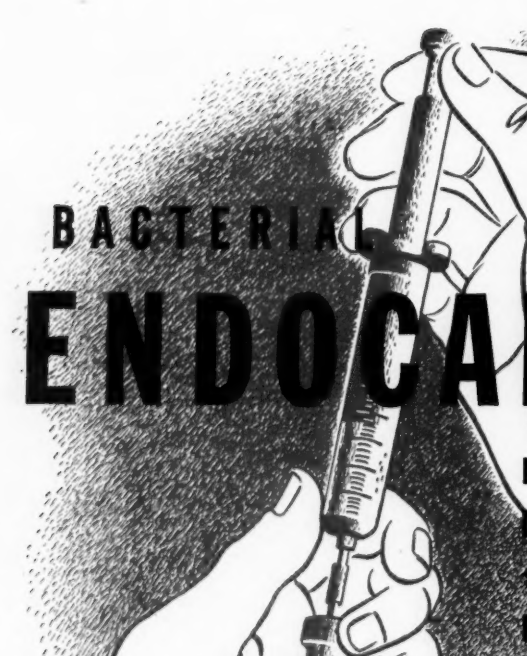
Following a general discussion, in which the members of the Board of Trustees seemed to be particularly interested in the financial aspect of Memorial Hospital's operation, while the members of the Society seemed to be more interested in the working of its staff, the meeting adjourned at 10:03 P. M.

A collation followed.

Respectfully submitted,

HENRY W. BROWNELL, M.D., *Secretary*

BACTERIAL ENDOCARDITIS



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Penicillin is the best agent available for the treatment of subacute bacterial endocarditis. Daily administration of 200,000 to 300,000 units or, in infections with resistant organisms, much more, in divided doses (every 3 hours) is required. Intramuscular injections are usually the route of choice; however, in certain instances, it may appear desirable to employ continuous drip. Therapy should be continued for a minimum of 3 weeks and must be continued until the blood cultures are consistently negative. Penicillin alone is as effective as penicillin and heparin combined.

Final determination of cure depends upon long-term observation, but if the patient remains asymptomatic and bacteriologically free for a period of 4 weeks after cessation of penicillin therapy, the prognosis for complete cure is excellent. However, it must be remembered that valvular damage and renal lesions are not favorably influenced.

DAWSON, M. H., AND HUNTER, T. H.: *The Treatment of Subacute Bacterial Endocarditis with Penicillin: Results in Twenty Cases, J.A.M.A. 127:129 (Jan. 20) 1945*... FAVOUR, C. B.; JANEWAY, C. A.; GIBSON, J. G., II, AND LEVINE, S. A.: *Progress in the Treatment of Subacute Bacterial Endocarditis, New England J. Med. 234:71 (Jan. 17) 1946.*

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EVOLUTION OF MEDICAL RECORD

continued from page 524

proved list of the College of Surgeons. The most important directions are:

(1) That records must be written within 24 hours of the patient's admission.

(2) That a patient may not go to the operating room without a complete history.

(3) Operative procedure must be written up following operation.

(4) Records must be complete and a final diagnosis tabulated on discharge of patient.

Now enough of Hippocrates, Ben Franklin, the College of Surgeons and the Association of Record Librarians. What are we doctors doing about all of this on our part.

Well, actually the improvement of doctors' records in the past five years has been stupendous but there is a long road to travel yet. It has been said that medical rules and ethics have been for the young doctor to fear and obey and the seasoned doctor to learn and forget. I am sorry to say I believe the same is true of the medical record situation today in many instances. More of the younger men are doing an excellent job. Many of the older men are still doing their records in the horse and buggy period. During the writing of this paper, I had occasion to look up an operation which was done about 10 years ago. The surgeon has since passed away. There was nothing written up on the operation and it left me with a troubled mind to know what procedure to take with this patient at present. Second and third letters of warning are sent out telling the doctor that he will not be allowed to send any more patients in the hospital, but to no avail. Just what to do about this I am not prepared to say but I do know that a child thinks a fire is pretty and something to play with until he has burned his fingers.

Recently, I was scheduled to operate in a certain hospital at 8:00 a. m. The patient came in the afternoon before and I had not written my history and physical. Upon arriving in the operating room, I was informed politely but firmly that when I had completed my chart, I would be in order for operating. My fingers were burned. I will not again play with fire and I still respect the hospital and am very grateful for the privilege of operating there.

We are at the present time doing well with our records. Most of them are written within 24 hours of admission. We are doing a rather poor job on writing our operative procedure following operation. It is my opinion that some hospitals should have a dictaphone. This is particularly true where operating rooms are not conveniently located to the record room or where it is not possible to have a stenographer posted at a desk near the operating rooms. It is true that unless people train themselves to use them correctly, they can be bothersome. On the other hand, operations are often done in the night or many times the record stenographer is busy on the floor and if a machine is convenient, I believe more of these operations would be written up immediately which is the only time to do this particular job. We are doing only reasonably well with our continued notes while the patient is in the hospital. We are not doing well at all with the discharge note and final diagnosis on the day of discharge of the patient. This last ruling is the only one that I personally feel is unreasonable. I believe there are exceptions to all rules but if a ruling is made that is more or less universally broken that ruling should be changed. We should be given 24 or 48 hours to complete and fill in the final diagnosis.

We must improve our admission and discharge diagnosis and have them correspond with the approved nomenclature. In this the record librarian is of the greatest help. This is also true of our nomenclature of operations performed. In fact I have come to the point of dictating the name of my operation and then turning to the record stenographer and asking for her approval.

We should have our diagnosis on discharge conform with the pathological diagnosis and I believe here there is room for much improvement. I find so many times the pathologist also has not conformed to the approved nomenclature.

We have now hastily spoken of the past, openly discussed the present and now just a word relative to tomorrow.

Miss Helen Lincoln, the present librarian at the New York Hospital, in a recent article entitled "Records Then and Now" and published in "The Modern Hospital" concludes with this paragraph: "I venture to say we have reached the saturation point in complex detail in record keeping and that our next important step will be simplification of systems and working routines to produce the maximum in essential data with the minimum of labor."

This is exactly my feeling at present. I want in the days to come to have a more intimate knowledge of the patient, his disease and treatment and less review of systems which are entirely irrelevant to his care and treatment. In the future: May the doctor portray a human and understanding mental picture of the patient and his treatment on paper. May the College of Surgeons give him character and relativity, and may the Record Librarian Association give him a permanent and everlasting home and always know how and where to find him.

CASH SICKNESS IN RHODE ISLAND

A Review of the Annual Report on Cash Sickness Compensation in Rhode Island and Recent Amendments to the Law

(*Prepared by* Research Council for Economic Security, *Chicago, Illinois — May 10, 1946*)

EVERY year since the start of benefit payments under Cash Sickness, the financial picture has grown progressively worse. The Tenth Annual Report of the Unemployment Compensation Board shows the gradual deterioration of the reserve fund. In 1943, there was a net increment in every quarter. In 1944, two quarters showed an increase, two a deficit. In 1945, every quarter showed a deficit.

For the year 1945, the deficit was in excess of $388,000, against a deficit of over $587,000 for 1944 or a total deficit in two years of nearly $1,000,000. The Tenth Annual Report mentions the possibility that in 1946, revenue might decline 20 per cent, while expenditures would remain at the 1945 level. In this case the deficit for 1946 would rise to $1,272,000.

When benefit payments began April 1, 1943, the reserve was about $3,000,000. At the end of 1945, it had shrunk to about $2,400,000. With a further decline in revenue but with expenditures at the 1945 level, the reserve at the end of 1946 would be down to $1,143,000, or about one-fourth of annual disbursements.

This does not mean that the Cash Sickness Plan will be abandoned. In state monopoly plans of this kind, deficits do not mean defeat, they mean only revision.

The Unemployment Compensation Board realizes the predicament. On page four of the Tenth Annual Report it states:

"Unless remedial action is taken by the legislature, the fund will, in the not-too-distant future, reach the position at which money will not be available for either the payment of benefits or for general administration.

"In its last annual report, the Board outlines some of the factors which are affecting the solvency of the fund. The additional experience which had been gained during 1945 indicates quite clearly that if the present schedule of benefit payments is to be maintained it is imperative that additional revenue be secured and that changes be made in the present eligibility requirements."

* * * *

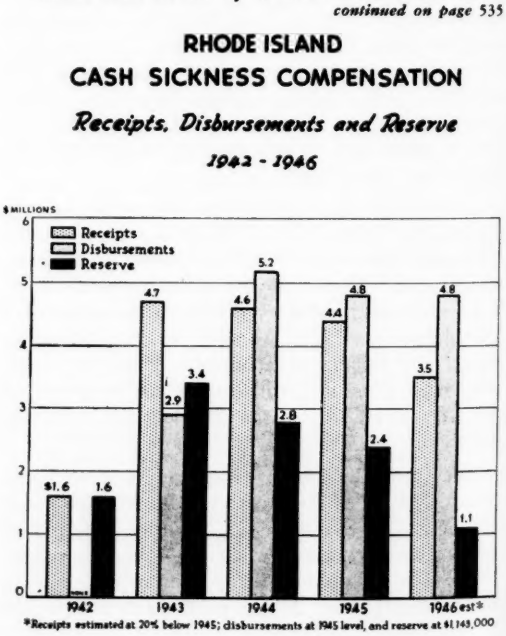
The Research Council for Economic Security has emphasized repeatedly during the last three years that a 1 per cent payroll tax is insufficient to finance a compulsory cash sickness plan such as originated in Rhode Island. The foreign experience has been unanimous in this respect. It has been found that a payroll tax of 1½ per cent and possibly more is required.

The legislature passed the following amendments which, with the Governor's signature, became law on April 24, 1946:

1) Those entitled to Workmen's Compensation as well as Cash Sickness benefits can receive not in excess of 90 per cent of average weekly wage.
2) Benefit period for pregnancy is reduced from 20 to 15 weeks maximum.
3) Eligibility after cessation of employment reduced from 2 years to 6 months.
4) Appropriation for administrative expense increased from 3 to 4 per cent for a two-year period beginning July 1, 1946.
5) Advisory Committee of seven members is created.
6) Remaining ½ of 1 per cent of State Unemployment Tax borne by worker is diverted from

continued on page 535

RHODE ISLAND
CASH SICKNESS COMPENSATION
Receipts, Disbursements and Reserve
1942 - 1946



*Receipts estimated at 20% below 1945; disbursements at 1945 level, and reserve at $1,143,000

CASH SICKNESS IN RHODE ISLAND

continued from page 532

Unemployment Compensation to Cash Sickness fund for a two-year period beginning July 1, 1946; this will raise revenue by 50 per cent.

The accompanying chart shows a decline of the reserve fund from a high of $3,400,000 in 1943, to $2.4 million at the end of 1945, and an estimated $1.1 million at the end of 1946, (at the present tax rate).

If the tax rate for the first two years would have been 1½ per cent, and for the next three years 1 per cent, the reserve fund would have reached a high of $6.5 million at the end of 1943, only to decline to $4.2 million at the end of 1946.

Obviously the legislature did not go far enough in allowing the Cash Sickness fund the additional ½ of 1 per cent tax for a period of only two years. What is required is a permanent 1½ per cent tax rate to finance the Cash Sickness Plan. If the 1½ per cent rate were applied to the five-year experience, it would build up a steadily growing reserve fund, namely:

Year	*Receipts*	*Disbursements*	*Reserve*
1942	$2,400,000	$ none	$2,400,000
1943	7,000,000	2,900,000	6,500,000
1944	6,900,000	5,200,000	8,200,000
1945	6,600,000	4,800,000	10,000,000
1946	5,200,000	4,800,000	10,400,000

The reserve fund would be necessary to meet emergencies which would probably arise sooner or later, such as epidemics, prolonged periods of depression, and others. It should also be noted that at the present time the Unemployment Compensation fund acts as a cushion upon Cash Sickness claims. But if unemployment grows large and claims rise proportionately, the effect would soon be felt upon the Cash Sickness claim rate and, therefore, upon the reserve fund. This may not seem important in the light of the large reserve built up during the war years, but it may be serious at a time of prolonged unemployment and economic recession.

Moreover, with the removal of the ½ of 1 per cent tax to Cash Sickness, the entire cost of Unemployment Compensation is borne by the employer while the cost of Cash Sickness is borne enitrely by the worker. This division may result in political differences not conducive to the efficient management of either plan.

The important lesson of the Rhode Island experience is that one per cent is not enough to finance a compulsory system of cash disability. Yet, in different states the advocates of such a system have based their arguments upon the adequacy of a one per cent tax. In the light of developments in Rhode Island as well as in foreign countries, this is an illusion and will be revealed as such whenever tried.

The foreign experience also shows a perspective not yet revealed in the State of Rhode Island. Contrary to widely held opinion, a cash disability plan opens more than merely the question of a 1 or 1½ per cent payroll tax. It opens such questions as extension of the compulsory principle: disability compensation and, eventually medical care as a public function; the growing importance of government as an entrepreneur; the excessive dependence of people upon government, and others. The broader implications point to a potential cost far greater than the financing of a single social service such as cash disability. The snowball character of that cost is clearly illustrated in the history of social security in Germany, Great Britain, New Zealand, and other countries.

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continued from page 520

ENDOWMENT FUND

Started in 1912 when the Trustees (of the Fiske Fund) announced that they had voted to take the remuneration allowed them by the will, i.e. 2/12 of the annual income, amounting that year to $69.69, and present this sum to the Society to be the foundation of a maintenance fund for the support of the Library building.

16 shares, National Bank of Commerce & Trust Co.	$ 1,200.00
Interest	48.00
74 shares, Providence Gas Company	906.50
Interest	37.00
*Peoples Savings Bank	4,428.23
Bank interest and interest on U. S. Treasury Securities	61.56
	$ 6,681.29

*(*May 16, 1945. Purchased U. S. Treasury Securities, Series G. $2,000*)

E. M. HARRIS FUND

Established in 1921 by a donation of $5,000 from Dr. E. M. Harris for the upkeep of the Library building.

25 shares, Consolidated Edison Co. 5%	$ 2,346.88
Interest (Paid to R. I. Medical Society for building repairs)	125.00
74 shares, Nicholson File Co.	2,719.00
Interest (Paid to R. I. Medical Society for building repairs)	66.60
	$ 5,445.96

* * * *

FRANK L. DAY FUND

Established in 1927 by a donation from the estate of Dr. Frank L. Day to be utilized for the purchase of books.

3000 Canadian National Railway Co.	$ 2,979.75
Interest (Paid for Medical books)	67.50
Industrial Trust Company	693.62
Paid from Industrial Trust account for medical books	27.15
	$ 3,768.02

* * * *

HERBERT TERRY FUND

Established in 1928 by a donation of $2,000 from C. B. and C. H. Kenyon, in memory of Dr. Herbert Terry, for the purchase of books and periodicals and for the binding of them, for the Library.

96 shares, Providence Gas Company	$ 1,152.00
Interest (Paid out for books)	48.00
	$ 1,200.00

* * * *

JAMES R. MORGAN FUND

Established by a donation of $500 in 1929 to be used for current expenses.

43 shares, Providence Gas Company	$ 526.75
Interest (Paid out for Society expenses)	21.50
	$ 548.25

* * * *

JAMES H. DAVENPORT FUND

Established in 1930 by a donation of $1,000 for the purchase of books for the Davenport Collection (Non-medical books written by physicians).

89 shares, Providence Gas Company	$ 1,068.00
Interest	44.50
Balance on hand	868.07
	$ 1,980.57

* * * *

CATALOGUING FUND

Created by Council in 1932 when balance of fund from Clinical Conference Fund was transferred for cataloguing fund for the Library.

Providence National Bank	$ 20.92

* * * *

PARTICIPATION ACCOUNT

Providence Institutions for Savings	$ 659.47

RHODE ISLAND MEDICAL JOURNAL

Annual Report — 1945

Receipts	
Advertising	$17,630.60
Subscriptions	230.00
	$17,860.60
Expenses	
Printing of Journals	$10,480.93
Copyrights	24.00
Printing — miscellaneous	105.25
Postage	310.27
Refunds	39.00
Salaries and Commissions	4,000.04
Staff expenses (travel and meetings)	556.52
Supplies and equipment	439.82
	$15,955.83
Cash on hand, January 1, 1946	$ 3,036.71

CHARLES J. ASHWORTH, M.D., *Treasurer*

LIBRARY

The activities of the Library have been much increased during the past year, especially in the more recent months, with the return of the many men who were in the Armed Services. The circulation of books and periodicals is constantly expanding and the Library is called upon more and more for information, by the public at large.

The following statistics will best show the facts.

Number of Visitors ..... 1,467 (day)

In April of this year, in response to various requests, the Library was opened from 7 to 10 P. M. on Tuesdays, Wednesdays and Thursdays. Thus far, in six evenings, there have been three visitors. This is frankly an experiment.

Books received, by purchase, from the R. I. MEDICAL JOURNAL, submitted for review, and by gifts 342

Circulation. 437 Journals; 130 books charged out and returned.

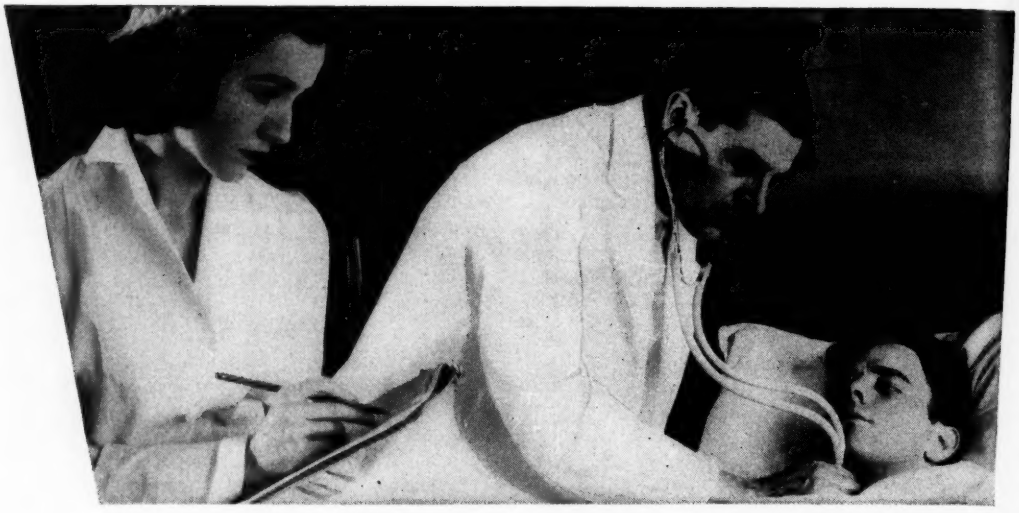
139 Journals 37 books now charged out.

Number of books in the Library not including pamphlets 34,149

Books and pamphlets catalogued to date	22,795
Journals bound and repaired	70
Inter-library loan requests	19
Journals received, subscription, gift and exchange	151

There have been added, during the year, Journal of Clinical Investigation and Journal of the History of Medicine.

continued on page 539



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ANNUAL REPORTS . . . 1945

continued from page 537

The following gifts are acknowledged with great appreciation:

Journals and pamphlets from Drs. Corrigan, Hammond, Kramer, Mowry, Partridge and Welch.

Books: From the Estate of Carl R. Doten, M.D. ..... 155 volumes
From the Estate of W. R. McGuirk, M.D. ..... 71 volumes
From Emery M. Porter, M.D. ..... 65 volumes
From Frank T. Fulton, M.D. ..... 11 volumes

New books have been purchased, as has seemed desirable, and as have been suggested by various Fellows. In this connection, it may be emphasized that requests for the addition of new books are always welcomed. Only through the interest of the Fellows can the Library keep abreast of the new literature in the many fields of medical science.

HERBERT C. PARTRIDGE, M.D. (*Chairman*), LOUIS E. BURNS, M.D., MEYER SAKLAD, M.D.

MEDICAL DEFENSE AND GRIEVANCE

No cases have come before this Committee except one which has been brought up in the past few days and cannot be reported in this year's business.

The Committee earnestly desires that the Fellows of the Rhode Island Medical Society should be sure that their insurance policies are adequate for any claims that may be filed against them for malpractice. It is expected that following the war a wave of malpractice suits will spring up over the entire country. Such litigation has been in abeyance during the war. It is also advised that insurance should be written for larger amounts since the ad-dammum will be higher in the future. This is in line with the increase in income and cost of living since the war. The public has become accustomed to thinking in terms of billions rather than millions.

ROLAND HAMMOND, M.D., *Chairman*, NORMAN S. GARRISON, M.D., JOHN E. RUISI, M.D., FENWICK G. TAGGART, M.D., JAMES L. WHEATON, M.D., ROBERT H. WHITMARSH, M.D.

MATERNAL HEALTH

The Committee on Maternal Health reports a total of 13,622 live births in Rhode Island during the year 1945, and during the same year a total of 16 maternal deaths, for a maternal death rate of 11.7 per 10,000 live births. Because of the lack of personnel to make a study of the causes of maternal deaths reported the Committee is unable to furnish this information as part of this report.

JOHN G. WALSH, M.D. (*Chairman*), EDWARD S. BRACKETT, M.D., BERTRAM H. BUXTON, M.D., JAMES C. CALLAHAN, M.D., CRAIG S. HOUSTON, M.D., JOHN F. MURPHY, M.D., RICHARD H. DOWLING, M.D., WALTER J. DUFRESNE, M.D., FERNALD C. FITTS, M.D.

PUBLIC LAWS

The requirement that the special survey laws commission submit in legislative form its study of a recodification and revision of the health laws at the 1946 session of the General Assembly probably halted the introduction of some health measures. Yet, in spite of the existence of this Commission, an act to license naturopaths, one to establish a state cancer hospital, one to provide an appro-

continued on next page

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priation of $125,000 for school health programs, and one aimed at anti-vivisection were placed before the Legislature. All four of these measures failed of passage.

The Health Code of 1946 was presented to the Assembly in the final weeks of the session. The Society had not previously seen the legislation, and therefore it requested a printing of the act which covered 569 printed pages. The Committee on Public Laws met twice within a week and carefully reviewed the proposed legislation. The findings of the committee were transmitted immediately to the Joint Committee on Health of the General Assembly. Three minor amendments were accepted by that committee, and the act was passed by the House. It was denied passage in the Senate on the grounds that it was a voluminous act making many changes in the existing laws, and its introduction at such a late date in the session did not permit careful study of it by the members of the Senate. The Survey Laws Commission was continued until February, 1947, by special legislative enactment, and the Health Code will be further reviewed during the intervening months preparatory to its re-introduction at the next session.

Amendments to the cash sickness act, including one relating to the definition of "sickness" were passed by the Assembly. These amendments have been published in the R. I. MEDICAL JOURNAL.

Among the measures of particular interest to physicians that were passed by the Assembly were the following: An act authorizing the cities and towns of the state to control air pollution; amendments to the cash sickness compensation plan; an act authorizing the incorporation, as a non profit organization, of the Kent County Memorial Hospital, with the officers of the Kent County Medical Society as the incorporators; and a resolution calling for a study commission to determine the advisability of a state hospital on the island of Block Island.

WILLIAM H. FOLEY, M.D., *Chairman*, HERBERT E. HARRIS, M.D., JAMES H. FAGAN, M.D., JOHN F. KENNEY, M.D., WILLIAM P. BUFFUM, M.D.

SOCIAL WELFARE

The Social Welfare Committee of the Rhode Island Medical Society has been in conference with the representatives of the Rhode Island Department of Social Welfare in an attempt to improve the medical care given to public assistance recipients. The State Department of Welfare has asked your committee to clarify,

1. The basic cost standards of physicians services, together with the cost standards for medication furnished by physicians, and payment for travel by physicians in rural areas.
2. The problem surrounding the proper identification of specialists in the field of medicine.
3. The cost standards for services and supplies provided by Optometrists and the standards for referrals from Optometrists to Ophthalmologists.
4. The attitude of the Rhode Island Medical Society concerning the East Providence, Warren, Bristol medical care experiment.

In an earnest effort to aid the recipients of public assistance and facilitate the administration of their care, your committee respectfully presents for your approval the following recommendations:

1. *Regarding fees:*

Visit to home within the community	$4.00
Night visit away from office before 11:00	5.00

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Night visit away from office after 11:00	6.00
Office visit with treatment	3.00
Visit out of the city for examination or treatment, in rural areas only	Fee visit plus 75 cents per mile
Consultation	10.00

A similar schedule of fees has been established in Michigan where it applies to all governmental and Veterans organizations. It is our feeling that this fee schedule should be established in Rhode Island. If this fee schedule is established, it is expected that the public assistance recipients will be able to receive better quality medical care since they will be in the same category with any other groups in the community. It is our intention that these fees include whatever usual medication will be given to the patient at the time, in other words, these fees are for examination with or without treatment. They are set forth for general practitioners only.

The Division of Public Assistance due to a limited appropriation, apparently is not now able to recognize these fees immediately. Many of the cities and towns in the State, however, have been paying similar rates which are above the standards set by the Division of Public Assistance.

2. *Specialists:*

It is requested, that when the classification of specialists is completed, that their identification be made known to the Department of Social Welfare, either directly, or through your Committee on Social Welfare.

3. *Ophthalmologists — Optometrists:*

Where possible all patients needing eye care should be referred to Ophthalmologists. However it is imperative that all persons under 16 years of age needing glasses for the first time should be seen by a Ophthalmologist and not an optometrist. All persons whose vision cannot be corrected to 20/30 should be seen by an Ophthalmologist.

4. *East Providence-Warren-Bristol Medical Care "Experiment":*

The East Providence-Warren-Bristol Medical Care "Experiment" has operated in these areas during the war years without criticism by physicians participating in it. It may well be the best manner of conducting the medical care program. Your committee feels, however, that this is not the time to recommend its extension throughout the State. During this period of transition to normalcy, the true value of this plan may be properly appreciated.

There is an excellent attitude by the Department of Social Welfare toward the quality of medical care administered to public assistance recipients. We have found their representatives to be cognizant of the wide variety of problems ever present in a medical care program. The administration of this program should receive the commendation of the Rhode Island Medical Society.

PETER F. HARRINGTON, M.D. (*Chairman*), HARTFORD P. GONGAWARE, M.D., EARL J. MARA, M.D., JOHN H. O'BRIEN, M.D., JAMES C. CALLAHAN, M.D., JOSEPH W. REILLY, M.D., ROCCO ABBATE, M.D., WILLIAM O. RICE, M.D.

TUBERCULOSIS

The Committee on Tuberculosis has had two meetings during the past year. The matters that came up for discussion were:

1. Whether or not personnel turned down or discharged

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**Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154; Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60; Proc. Soc. Exp. Biol. and Med., 1934, 32, 241; N. Y. State Journ. Med., Vol. 35, 6-1-35, No. 11, 590-592.*

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by the armed services because of tuberculosis were reported to proper local health authorities.

2. Whether the cases of tuberculosis discovered on routine x-raying at Walsh-Kaiser were being followed.
3. Whether or not the present system of reporting tuberculosis in civilian practice was adequate.
4. Progress in industrial preemployment examinations.
5. The status of care of tuberculosis in Rhode Island.
6. Tuberculosis education.

It was felt that the local induction authorities had been very cooperative in reporting their cases of tuberculosis, but that since the transfer of the induction center to Boston, the reports had not come through so well and that for the men that had been discharged from service, chief reliance for reports rested with the civilian physicians whom the discharged veterans consulted.

The cases found at Walsh-Kaiser have apparently all been reported and followed either by local physicians or by one of the tuberculosis clinics of the city or state.

In regard to the reporting of tuberculosis by civilian physicians, it was felt that frequently the physicians were remiss, and that some system to stimulate the reporting would be advisable.

It was the consensus of opinion that the blanks for reporting should be simplified and that one blank should be used for all reportable diseases. It was further suggested that some penalty might be imposed by proper authority on those who failed to comply with the regulations or some compensation provided for those complying.

In regard to preemployment and routine x-raying in industry, Dr. Pinkney reported that the demand for the use of the mobile unit is becoming more general and that certain labor organizations are taking a more favorable attitude toward it than formerly. Dr. Merlino reported that further ground work had been done in regard to screening for pulmonary tuberculosis. He outlined a program for the use of two 70 mm. photofluorographic units to be run by the State Tuberculosis Division, one of which will be mobile and will be used in industrial and school surveys. The other unit will be set up in the State Office Building or other satisfactory location with the intention that it be used for preemployment and any other general screening that appears to be practical.

There are many problems that militate against the ideal functioning of the State Sanatorium, some of which are beyond immediate control, the chief of which is apparently economic. This economic problem concerns both patient and hospital personnel. Many patients refuse proper care because adequate support for their families cannot be obtained during the period of enforced rest. Because of the scarcity of trained personnel of all types and the rising wage scale, there is a serious problem in maintaining desired facilities. It is felt that the hospitals for acute diseases in the state could relieve the pressure considerably if they would carefully rule out nontuberculous disease before requesting transfer to the Wallum Lake Sana-

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torium. There is also the problem that an appreciable number of patients are by personality not adaptable to institutional care. Family physicians and social workers can be of vast assistance in many cases by familiarizing themselves with the sanatorium and home problems and assisting the patients and their families in meeting them. Frequently careful explanations and encouragement go a long way in alleviating trying circumstances. More general cooperation of the physicians and patients of the state with the health authorities would greatly facilitate the follow-up of known cases of tuberculosis.

To assist in the education of medical personnel in training in Rhode Island your committee sponsors the circulation to the resident staffs of hospitals two pamphlets, "Chest X-ray Interpretation" by J. Burns Amberson, Jr. and "Diagnostic Standards and Classification of Tuberculosis" published by the national society. To further education in regard to tuberculosis in general a search is being made for a public relations man to work on this phase in Rhode Island.

We again discussed and reapproved a previous motion that there be at least one talk on tuberculosis on the calendar of the local medical societies each year.

JOHN C. HAM, M.D., *Chairman*, ROYAL C. HUDSON, M.D., DANIEL A. SMITH, M.D., PHILIP BATCHELDER, M.D., KATHLEEN M. BARR, M.D., CHARLES L. SOUTHEY, M.D., PETER F. HARRINGTON, M.D., UBALDO E. ZAMBARANO, M.D., JAMES P. DEERY, M.D.

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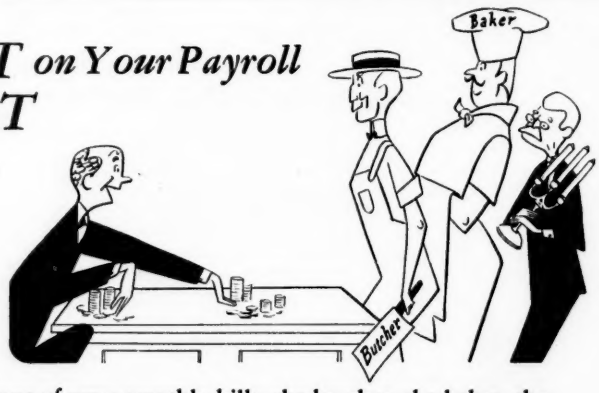

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MEDICAL NEEDS OF THE RURAL COMMUNITIES

(An address presented to the Council of the New England Medical Societies at Concord, New Hampshire, June 9, 1946, by George M. Putnam, President, Farm Bureau of New Hampshire; Director, National Farm Bureau.)

I APPRECIATE your invitation to discuss with you the "Medical Needs of Rural Communities." Maintaining the health of rural people has been a subject of great concern to our organization—The Farm Bureau—almost from its inception.

In 1927 the women's branch of the American Farm Bureau Federation had as the subject of its annual speaking contest—"Better Health for Rural America." In preparation for this contest farm women from twenty-five states studied this problem and debated such significant questions as "How shall the sick be helped? How shall the doctor be paid."

In the prize winning essay submitted that year the speaker cleverly referred to the old poem "Which Shall It Be?" then continued with the story of a father and mother taking a survey of their children as they lie asleep, trying to decide which one they would give away for a sum of money. The question was asked, would you care to make a survey of the children of your home or your community and see which one you would be willing to lose in either rural or urban America for the sake of saving money. The need for adequate health protection applies alike to rural and urban areas.

In 1945 our annual meeting again adopted the following resolution in support of a program to bring about better health facilities for rural areas:

"One of rural America's most urgent problems is to provide a program to bring about better facilities in rural areas for hospitals, medical care and improved health. It will take the combined efforts of the medical profession and rural people to solve the problem.

"The solution must provide for comprehensive health education, for well trained doctors, dentists, nurses, technicians and laboratory scientists, as well as the establishment of Public Health Centers, hospitals and clinics accessible to all sections of rural America.

"The care of our former service men and women, of the mentally sick and the indigent and the control of communicable disease is a public obligation and should be supported from public taxation. In some communities after careful surveys it may be found advisable to use Federal grants-in-aid to assist groups to erect and equip hospitals. These must be controlled by the local people themselves.

"We believe in the extension of voluntary group prepayment services on some type of an insurance plan that provides greater flexibility and would be more likely to succeed over a wide area than rigid uniform plans on a compulsory basis. We believe that a plan which will provide for prevention as well as curative measures and the right of the free choice of doctors should be zealously guarded."

The American Farm Bureau has established a Medical Care Committee that has been and is very actively engaged in a study of this problem of rural health and in many states similar committees have been created who are cooperating with this committee. The National Committee has met with a representative Committee of the American Medical Association and during the discussion it was informally agreed that some of the existing needs are:

(1) A constructive, agressive program for medical services on a voluntary basis.

(2) Local participation and local control of any medical care program.

(3) Physicians' services in rural areas with sufficient income and availability of facilities will be required.

(4) Attack on the whole health problem including preventive as well as curative, to reach the entire population.

(5) An evolutionary program but not revolutionary.

(6) Adequate surveys.

The Medical Association Committee also agreed on suggestions made by the Farm Bureau Committee as follows:

(1) That the A.M.A. urge State Medical Associations to cultivate better working relationships with State Farm Bureaus.

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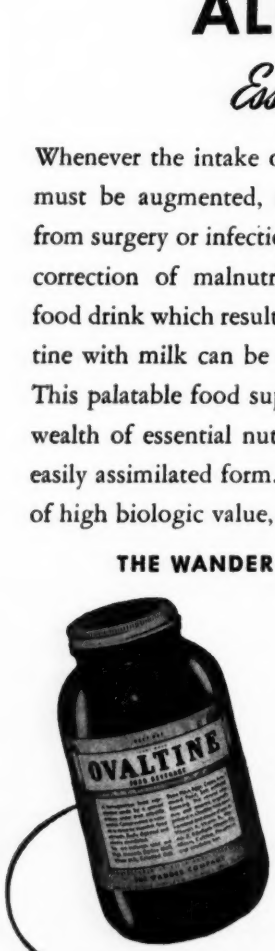

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THE VIRUS TYPE OF INFECTIOUS HEPATITIS

concluded from page 510

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MEDICAL NEEDS OF RURAL COMMUNITIES

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(2) That all committees—National, State or community selected or appointed have qualified farmer representatives.

(3) Work with medical profession in combating socialized medicine by promoting an agressive constructive program.

(4) Determine the need on factual basis after thorough consideration and research of the need for hospital and medical services with particular reference to rural areas.

(5) That the American Farm Bureau and State Farm Bureaus assume active leadership in working out plans for wise, effective use of public funds for improvement of public health with emphasis on local participation and local control.

(6) That some plan be worked out to assist in providing scholarships or loan funds for worthy rural youth to make it possible to study medicine with or without agreement to return to the country for practice.

(7) One of the problems in medical care for rural people is payment. We urge the development of prepayment medical and hospital care on a sound actuarial basis without subsidy.

Of course the discussion of problems by the National Medical Association and Farm Bureau Committees were on a national basis and related to conditions in the country as a whole. Fortunately on many of the things that were suggested by the Conference action has already been taken in this state and the Farm Bureau and our State Medical Association have cooperated in securing the improvements that have already been made, but much still remains to be done. This is especially true as applied to many rural communities. We have Blue Cross well established and more recently Blue Shield has been organized and is now available.

The situation with reference to local physicians in rural towns has been gradually growing worse. If you will pardon a personal reference I well remember when in my own town of Hopkinton we had four physicians, two in Hopkinton Village and two in Contoocook and until very recently we have been without a physician for a considerable time until recently one established an office in Contoocook and to say it mildly, the people of the community feel greatly relieved. But what of the small rural communities farther removed from urban centers where physicians are less available and where the cost of medical service from these urban areas to many of these rural families would be prohibitive.

Is it an obligation of Government to see that funds are provided to insure medical service for all citizens wherever they may reside? If so, how is the cost of this to be met? In a few instances towns have appropriated funds to supplement the income of the resident physician—Is this the better way to meet the situation? Or is it an obligation of the state to accept the responsibility of establishing a health program that is available to all its citizens wherever they may reside?

These are only a few of the questions that might be raised with reference to the all important question, the health of our people. We are far better situated here in New Hampshire and New England than are the people of some other sections of our country. This raises the question of what should be the responsibility of our Federal Government in this connection?

I think we can agree that whatever is done by either State or Federal Government it should be on a voluntary basis and under state or local control. If the Federal Government is to support such a program it should be for the purpose of correcting the inequalities that now exist in the cost of such a program as between the states and in the financial ability of the states to assume such costs. The health of our people is one of the most important factors and will have a great influence on the future of our nation. We must give this important subject the consideration it deserves. Farm Bureau, an organization representing a million farm families, is deeply concerned with the problem of public health and we extend to you our full cooperation in the development of a constructive program for improving the health and vitality of all our people.

7th Annual

INDUSTRIAL

HEALTH

CONGRESS

at Boston, Mass.

SEPTEMBER 30 . . OCTOBER 5

Sponsored by the Council on Industrial Health of the American Medical Association and the Council of the New England State Medical Societies.